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Volume II

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16. ABSTRACT

A study to determine the economics of water delivery was completed in 12 selected Class A (revenues greater than $500,000/year) water utilities and is reported in The Cost of Water Supply and Water Utility Management, Vols. I and II, EPA-600/5-77-015a and 015b, November 1977. The effort provided valid data on large water systems but raised questions about the costs associated with small utilities.

As a follow-up to the earlier effort, a study of 23 selected small water utilities was undertaken to determine the economics of water delivery. Data were collected from seven to nine small utilities in each of three U.S. Environmental Protection Agency Regions.

Volume I of this report is an in-house effort that provides summary information and in-depth analyses of the utilities studied. All utilities are analyzed in aggregate, and factors affecting the cost of water supply are examined. An evaluation of the hypothetical 1980 impact of the Safe Drinking Water Act of 1974 is also provided

Volume II contains the basic data from each of the 23 utilities studied and contains the results from the contractual effort. Services of each utility are divided into three functional areas common to all water supply delivery systems: acquisition, treatment, and delivery. These areas provide a common basis for collecting and comparing data. Costs are categorized as either operating or capital expenditures.

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MANAGING SMALL WATER SYSTEMS: A COST STUDY

Volume II

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FOREWORD

The Environmental Protection Agency was created because the public and the federal government were increasingly concerned about the dangers of pollution on the health and welfare of the American people. Noxious air, foul water, and spoiled land are tragic testimonies to the deterioration of our natural environment. The complexity of that environment and the interplay among its components require a concentrated and integrated attack on the problem.

Research and development is that first step in problem solution, and involves defining the problem, measuring its impact, and searching for solutions. The Municipal Environmental Research Laboratory develops new and improved technology and systems: 1) to prevent, treat, and manage wastewater, solid and hazardous waste, and pollutant discharges from municipal and community sources; 2) to preserve and treat public drinking water supplies; and 3) to minimize the adverse economic, social, health, and aesthetic effects of pollution. This publication is a product of that research and is a most vital communications link between the researcher and the user community.

The Safe Drinking Water Act of 1974 establishes primary health-related standards and secondary aesthetic-related but noneforceable guidelines for drinking water supplies. These standards will bring about a fundamental examination of the way water is handled before it is delivered to the consumer. Many of these changes will have an economic impact on the affected water utilities. This report provides detailed information on the current costs of water supply for 23 selected small water utilities. In addition to providing information on the individual supplies, data are aggregated to provide projections of the relative impact of various strategies that might be undertaken to satisfy the Act's requirements. The data and associated analyses are presented in two volumes. Volume I is a summary of selected data from the study along with analyses of the data. Volume II contains detailed in-depth information for each utility studied.

Francis T. Mayo
Director
Municipal Environmental Research Laboratory

EXECUTIVE SUMMARY

This two-volume report presents the results of an in-depth review of the financial data and operations of 23 selected small water utilities located in the Environmental Protection Agency's Regions III, V, and VI. Volume II contains basic data for 23 and represents the results from EPA contract 68-03-2071.

The effort required that 30 small utilities be visited and data gathering attempted. Twenty-three or 77 percent of the utilities provided data to the level that at least a limited computer printout could be produced. The data from six of the remaining seven utilities either were not available or were mixed with other data so that it could not be separated. At the other utility, no one was available from whom to gather the data. (The water utility person forgot the appointment.)

Of the 23 utilities from which data were gathered, only 14 (61 percent) had records that provided reasonable detail for ten years of history. Only 11 (48 percent) had any record of KWH. Generally, it was possible to obtain or estimate man-hours at small utilities since so few people were involved. At only three utilities (13 percent) was it impossible to obtain or estimate the man-hours.

Two (9 percent) of the 23 utilities were privately owned. Very little difference existed between the documentation of public and private owned utilities. The quality of data generally remains constant from utilities within a state but varies considerably between states. The Texas utilities had significantly better documented data than the utilities from the other states.

Volume I of this report contains a summary of the small utilities' data, a statistical evaluation of the factors affecting the cost of water supply, and an evaluation of the cost impact of add-on technologies to satisfy the requirements of the Safe Drinking Water Act (SDWA). This represents an in-house analysis of the data collected under Contract 68-03-2071.

Data were collected for a 10-year period on the four major operating and maintenance (O&M) components plus three other significant O&M elements and the capital costs associated with depreciation and interest. The four major O&M cost components are support services, acquisition, treatment, and delivery. Although the three significant O&M elements, chemicals, payroll and power, are intrinsic to each of the four major components, they are considered separately in the area of their individual impact on

operating expenses. Depreciation expense for each major cost component is examined as to its relative capital intensiveness.

The amount of revenue-producing water (RPW) is used in all calculations because it is the basis of water utility income and is useful in making comparisons between utilities. At the same time, it can be converted to reflect the total amount of treated water.

Total costs and the amount of RPW on a MGD basis for the latest year of record are provided for each of the 23 utilities in Table 1. Special taxes for private utilities such as real property are not included in these data.

Individual and comparative analyses of the cost variables reveal certain trends. The distribution category remains the most significant cost component, though other components have increased more rapidly. Labor costs represent a significant part of total O&M costs and in many cases have more than doubled over the study period. A mathematical ratio relates labor cost and productivity to capital productivity and cost. In this manner, the cost impact of increased output is examined in relation to payroll and capital expenditures. In addition, the effect of inflation on the utility budget is also analyzed.

Using historical cost trends and costs of new treatment technologies, the cost for meeting requirements of the SDWA can be examined. Figure 1 shows the average costs for meeting the requirements of the SDWA. On the average, the costs for the 23 utilities shows an increase of less than 5 percent; however, extreme increases of more than 100 percent occur, as discussed in the text of Volume I.

This information in conjunction with the analyses presented in this volume is intended to aid utility managers in decisions related to increased output, effects of inflation, and implementation of the SDWA requirements.

This report is submitted by ACT Systems, Inc. in fulfillment of Contract No. 68-03-2071 under the sponsorship of the U.S. Environmental Protection Agency.

TABLE 1. COST ANALYSIS SUMMARY FOR LATEST YEAR OF RECORD

Utility	Revenue-producing water (MGD)	Cost Categories ($/mil gal)					
		Support Services	Acquisition	Treatment	Distribution	Interest	Total
Downingtown	0.86	174	49	172	243	15	653
Great Valley	1.05	223	223	112	201	81	840*
Honey Brook	0.11	34	116	38	94	119	401
Audubon	0.39	373	218	16	124	227	957+
Manassas	1.25	103	135	477	268	439	1423*
Manassas Park	0.28	303	106	0	72	135	616
Culpeper	0.71	96	0	351	368	133	948
West Dundee	0.34	42	159	12	160	0	373
Algonquin	0.27	--	--	--	--	--	715
Lake Zurich	0.68	71	118	21	307	264	781
Burlington	0.06	131	124	110	273	0	638
Lowell	0.42	285	152	119	536	139	1231
Lebanon	0.67	173	141	117	671	116	1218
Batavia	0.13	133	78	128	729	298	1366
Belton	0.98	91	317	1	335	33	778
Georgetown	0.86	122	16	13	290	58	500
Taylor	0.78	157	97	31	428	95	809
Bell County WCID #1	15.28	12	28	27	50	22	139
Killeen	4.39	62	181	1	230	94	568
Denton	6.35	35	46	138	167	88	475
Colony MUD #1	0.12	782	386	64	3194	396	4821
Dallas County WCID #6	0.92	199	274	0	272	203	948
Cockrell Hill	0.28	166	394	0	204	26	791

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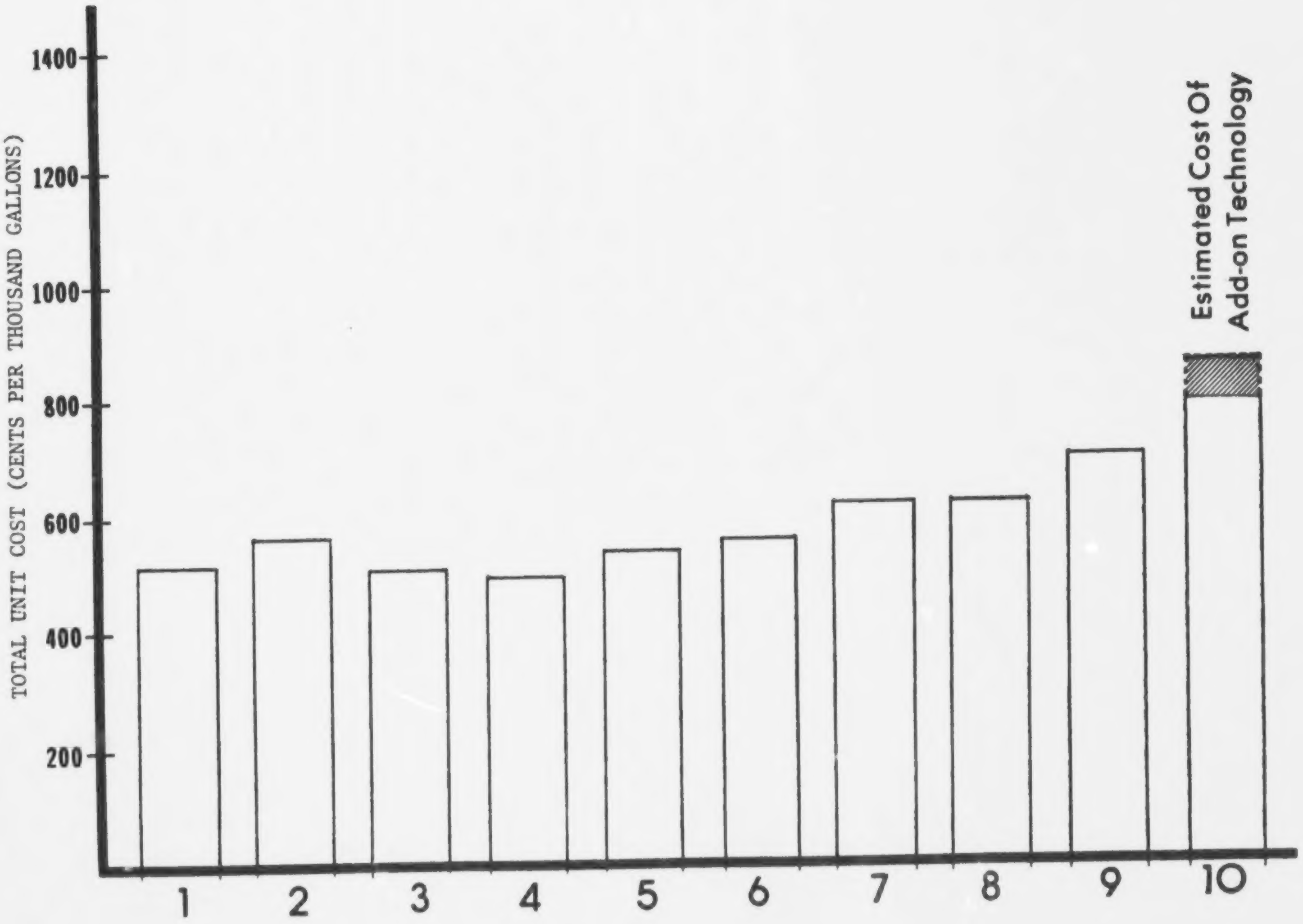
* Taxes of $26/mil gal not included.

+ Taxes of $2/mil gal not included.



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ABBREVIATIONS AND SYMBOLS

Cost	-- expense of water production
kwh	-- kilowatt hours
Maximum day/ maximum hour	-- maximum day flow for the year in MGD/maximum hour flow for the year in MGD
MGD	-- million gallons per day
mil gal	-- million gallons
Price	-- amount charged user
Retail service area	-- area in which water is retailed by the utility
RPW	-- revenue-producing water. The water measured as metered consumption and paid for by wholesale and retail customers in the service area
SDWA	-- Safe Drinking Water Act (sometimes refered to as the Act)
Source water	-- raw water from ground or surface supply
SMSA	-- standard metropolitan statistical area
Treated water	-- the amount of water treated through the water utility's treatment plant

METRIC CONVERSION TABLE

English Units	Metric Equivalents
1 foot	0.305 meters
1 mile	1.61 kilometers
1 sq mi	2.59 sq kilometers
1 mil gal	3.79 thou cu meters
1 $/mil gal	0.26 $/thou cu meters

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Gene Moore, City Manager, Manassas Park
Claude Huffman, Town Manager, Culpeper
Ray Johnson, Superintendent of Public Works, West Dundee
Howard Fish, Water Works Superintendent, Algonquin
Del Hosler, Village Manager, Lake Zurich
John Turk, Plant Operator, Burlington
John Bartholomew, Plant Operator, Town of Lowell
Charles Guard, City Manager, Lebanon
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SECTION 1

INTRODUCTION

The SDWA will bring about a fundamental examination of the way drinking water is handled before it is delivered to the consumer.[1] The Act establishes primary health-related standards and secondary, but not enforceable, aesthetic guidelines for drinking water supplies. Throughout the Act, emphasis is placed on the need to consider the economics of water delivery.

In response to this need, the Municipal Environmental Research Laboratory (MERL) of the U.S. EPA Office of Research and Development initiated a two-year study of selected water utilities to collect and analyze cost data from at least one Class A water utility (revenues greater than $500,000/ year) in each of the 10 U.S. EPA regions. The results of this effort are reported in The Cost of Water Supply and Water Utility Management.[2]

The information developed in this study of the large utilities was found useful and questions were raised about the costs of water delivery in small utilities. In 1976, a one-year study was initiated as a pilot program to determine whether the same types of information could be obtained from small utilities and documented in a format similar to that used for the Class A water utilities.

This pilot study was accomplished in EPA Regions III, V, and VI. Figure 2 identifies the location of the 10 small utilities selected in each region. Under the program, a personal visit was made to each utility to ensure data validity. One objective of the effort was to determine the feasibility of gathering cost and operational information from a utility in a one-day visit. For this reason, the sample utilities selected were clustered within an area to comprise approximately a one-week work effort. It was determined that with appropriate preparation, in-depth information can be gathered from a small utility in one day.

A computer program was developed utilizing the raw data from each utility to identify and print out the information to the functional areas of acquisition, treatment, and delivery. These subsystems are common to all water supply delivery systems and provide a common base for data collection. Another category common to all utilities is support services, the management or administrative function which completes the framework of an institution that insures an adequate supply of safe drinking water. This institution is most commonly called a water supply utility.

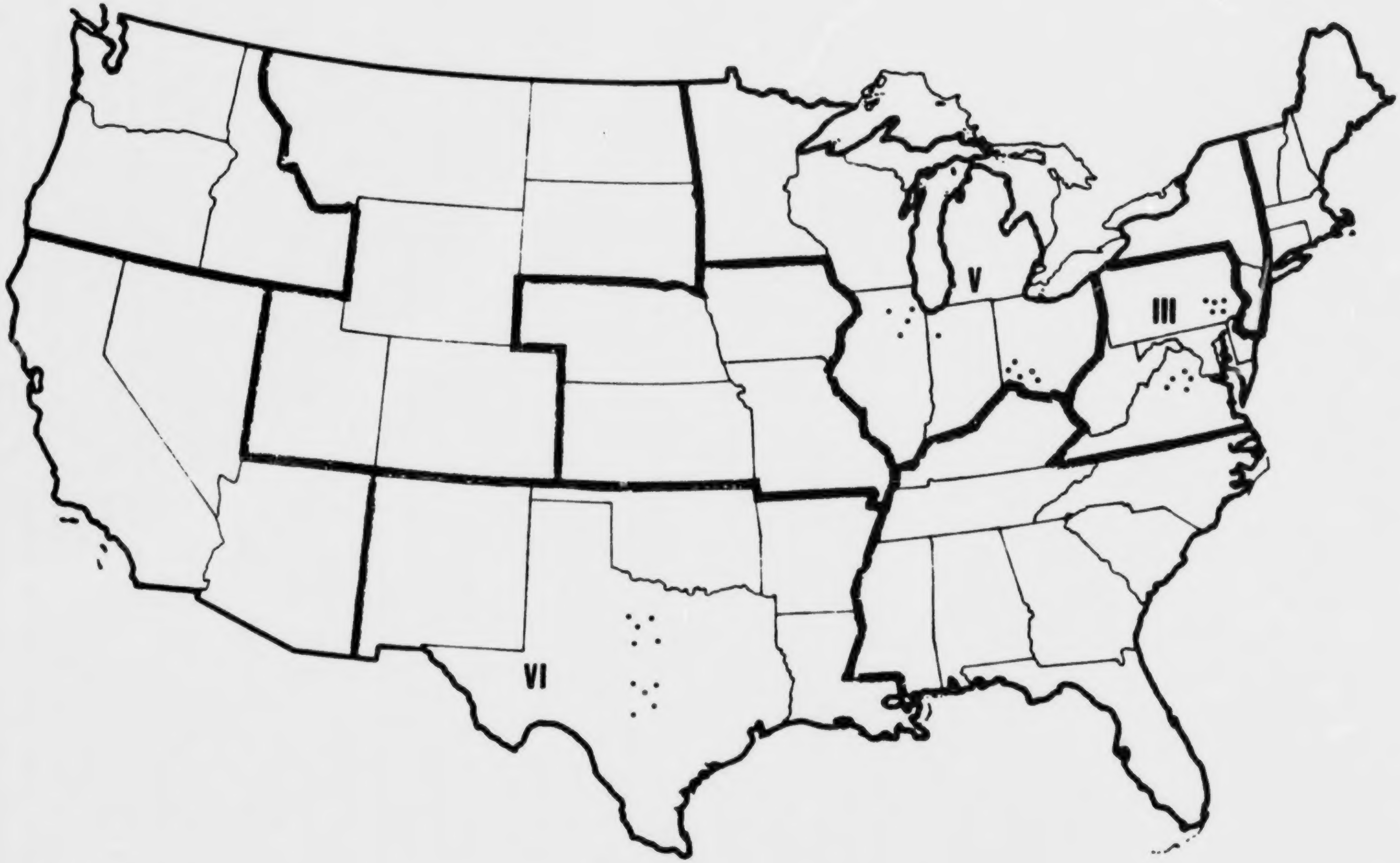

Figure 2. Small water utilities studied.

Costs are categorized as either operational or capital expenditures. Operating costs are assigned to the following functional areas: 1) acquisition, 2) treatment, 3) delivery, and 4) support services. The first three functional areas are related to the physical delivery of water and the fourth, support services, relates to the overall integrative responsibility of utility management. Operating costs include labor, maintenance, and materials. For example, if the utility includes a treatment division, laboratory personnel costs are included in the treatment costs category; but management costs for the division are included in the support sevices category. Support services include all administrative and customer services required to manage the water utility and collect revenues but do not include services directly related to the physical process of delivering water.

Capital costs are assumed as depreciation and interest for the plant in service. Depreciation is based on the historical cost of the facility divided by its useful life and not on the cost required to reproduce the facility; therefore, lower costs are associated with the older utilities. Interest costs are the dollars the utilities must pay for bonds or other money raising mechanisms.

Revenues are not considered in this report. All of the data reported relate only to the cost of water supply and do not include broader aspects related to the elasticity of demand or optimal pricing policies of water supply. All costs reported are based on RPW pumped by the utility during the time period covered by the data collected.

This report is prepared in two volumes. Volume I contains summary information and analyses of the factors affecting the cost of water supply and Volume II contains the basic data from each selected utility.

SECTION 2

DATA COLLECTION, DISPLAY, AND UTILITY SELECTION

DATA COLLECTION

All data were collected by a contract representative who visited each utility and reviewed all information recorded with a utility representative. In every case, data were collected in the format maintained by the utility. Where the water utility was maintained as an independent operation from any other service, it was necessary only to obtain an understanding of the information recorded in the financial system along with the operations of the utility. Where an organization provided water service along with other services, such as sewerage, it was necessary to identify and separate the proportion of certain costs attributable to the water activities from costs related to other activities. This was accomplished by working with utility representatives at the utility to identify each line item containing combined costs. These costs were then allocated to the water supply operation and to the other operations based on an allocation technique.

An important reason for direct contact with each utility was to insure data validity. Direct contact allowed in-depth discussions between the data collector and utility personnel. This assured that the utility representatives had a clear understanding of the program objectives, the analytical techniques and terminology used, and the importance of obtaining valid information.

At each utility, the procedure followed was to obtain the maximum amount of data for the past ten years including the latest completed fiscal year. Many of the utilities visited did not have detailed financial records of their activities over a ten-year period. At some utilities, detailed records were maintained only for the two preceding years with less detailed records maintained for an extended period of time. In such cases, detailed information was obtained as available; and general information was gathered for the remaining time period.

The data collected in a given utility were analyzed and processed in a format comparable between utilities. These data were then carefully evaluated by the data collector to assure that accuracy was maintained in processing. Results were then reviewed by representatives of each utility, and changes were made as required to accurately reflect the utility's operation. As a result of this review, the information received the approval of the utility management as an accurate reflection of their system.

DATA DISPLAY

The raw data were keypunched and processed through a computer program. The appendices contain the printouts for each of the utilities. The printout contains 18 pages. In a normal printout fanfold, each time a page is turned, two pages are in a position to be observed. The printout is so designed that the upper page reflects descriptive information about the data shown on the page below. The odd-numbered top page contains the same descriptive information regardless of the utility represented. Because of this repetition, the odd-numbered pages are included in the appendices only for the Downingtown system, the first utility printout in Appendix A.

Each utility printout displays all the information useful to the report. Where information was not available at the utility, a double dash (--) appears in the display. Under certain conditions, it was possible to determine total cost, but such costs could not be assigned to support services, acquisition, treatment, and delivery. In these cases, the total cost appears in its column, but the supportive information for the function does not appear and is replaced by the double dash. This means that the total cost is considered accurate, but the detailed information was not adequate to allocate the cost to the subfunctions.

UTILITY SELECTION

Ten small water utilities in each of the participating EPA Regions were selected for inclusion in the study. The selection of the 10 utilities in each region was made by the respective EPA Regional Water Supply Office. In most cases, decisions were made in conjunction with state water supply personnel. After selection, each utility was contacted by telephone and by letter. Cooperation was obtained, and data were collected and processed. The remainder of this report is a description by region of the selected utilities and their processed data.

SECTION 3

REGION III WATER UTILITIES

The EPA Region III Water Supply Office selected five small water utilities in Virginia and five in Pennsylvania to participate in the study. The Pennsylvania utilities were selected by the EPA Regional Office and the Virginia utilities were selected by the EPA Regional Office in conjunction with the State of Virginia. The following utilities were selected for implementation.

1. Downingtown Water Utility
   Downingtown, PA

2. Great Valley Water Company
   Malvern, PA

3. Honey Brook Water Utility
   Honeybrook, PA

4. Audubon Water Company
   Norristown, PA

5. Manassas Water Utility
   Manassas, VA

6. Manassas Park Water Utility
   Manassas Park, VA

7. Culpeper Water Utility
   Culpeper, VA

8. Borough of Malvern Water Company
   Malvern, PA

9. Purcellville Water Utility
   Purcellville, VA

10. Leesburg Water Utility
    Leesburg, VA

All 10 utilities were visited and cooperated in the study; however, adequate data to accomplish the objectives of this study were available at only the first seven of the utilities listed above. Processed data for these utilities are shown in Appendix A, and each of the seven EPA Region III utilities is described in this section of the report. Table 2 provides a general profile of each utility.

DOWNINGTOWN WATER UTILITY

Location and Operation

The Downingtown Water Utility is owned and operated by the Borough of Downingtown, Pennsylvania, located approximately 25 miles west of Philadelphia. The water system serves a population of approximately 8,300 people in a retail service area of 3.0 square miles. During the period from 1966 through 1975, the RPW for the utility decreased 21 percent from 402 mil gal in 1966 to 316 mil gal in 1975. In 1975, the average cost for RPW was $653/mil gal. Of this amount, 83 percent was O&M expense and the remainder was depreciation and interest. Because of the decrease in RPW and accelerating operating cost, the total cost/mil gal increased significantly during the past 10 years. In 1966, it cost only $211 (1966 dollars) to produce 1.0 mil gal RPW.

The System

The Downingtown Water Utility utilizes surface water as its source. The utility has two intakes. One of these, along with a pumping station which transmits the water to the treatment plant, is located at Beaver Creek. The other is located at Copeland with the reservoir and treatment plant. The reservoir and treatment plant have been in existence since 1926 with no major modifications. One hundred percent of the water is subjected to the following treatment processes: 1) sedimentation, 2) coagulation, 3) filtration, and 4) chlorination. A small amount of water (about 2 percent) is also treated with activated carbon. The finished water is supplied to an open earthen reservoir which has a capacity of 3.75 mil gal. From this reservoir, water is distributed to the customers. In 1955, a booster pumping station was constructed and in 1965, two elevated ground storage tanks were added to the system, one in the northern portion of the distribution system and one in the south. Each of these storage tanks has a capacity of 2.0 mil gal.

Sixty percent of the pipe in the ground was installed prior to 1950 with about 20 percent being installed prior to 1925; 32 percent was installed between 1950 and 1966; and the remaining 8 percent was installed during the last 10 years. As can be seen from these figures, the system has continued to expand physically even though the RPW has decreased.

The Downingtown system is connected with the Whitford Water Company, a well system, so that treated water can be purchased under emergency conditions. Each year a minimum amount of water is purchased for the purpose of testing the meters and the connecting facilities. Figure 3 is a simplified

TABLE 2. REGION III - SMALL SYSTEMS UTILITIES PROFILE

Utility	Population x 1000	Area Sq Mi	Accounts x 1000	RPW Mil Gal	Percent Purchased	Source (Ground/ Surface
Downingtown	8.3	3.0	1.9	316	1	S
Great Valley	16.5	40.0	3.3	383	0	G
Honey Brook	1.4	0.8	0.3	41	0	G
Audubon	6.7	--	1.2	142	0	G
Manassas	15.0	8.0	3.1	455	0	S
Manassas Park	6.8	2.0	1.8	103	0	G
Culpeper	7.5	8.0	2.1	260	0	S (99%)

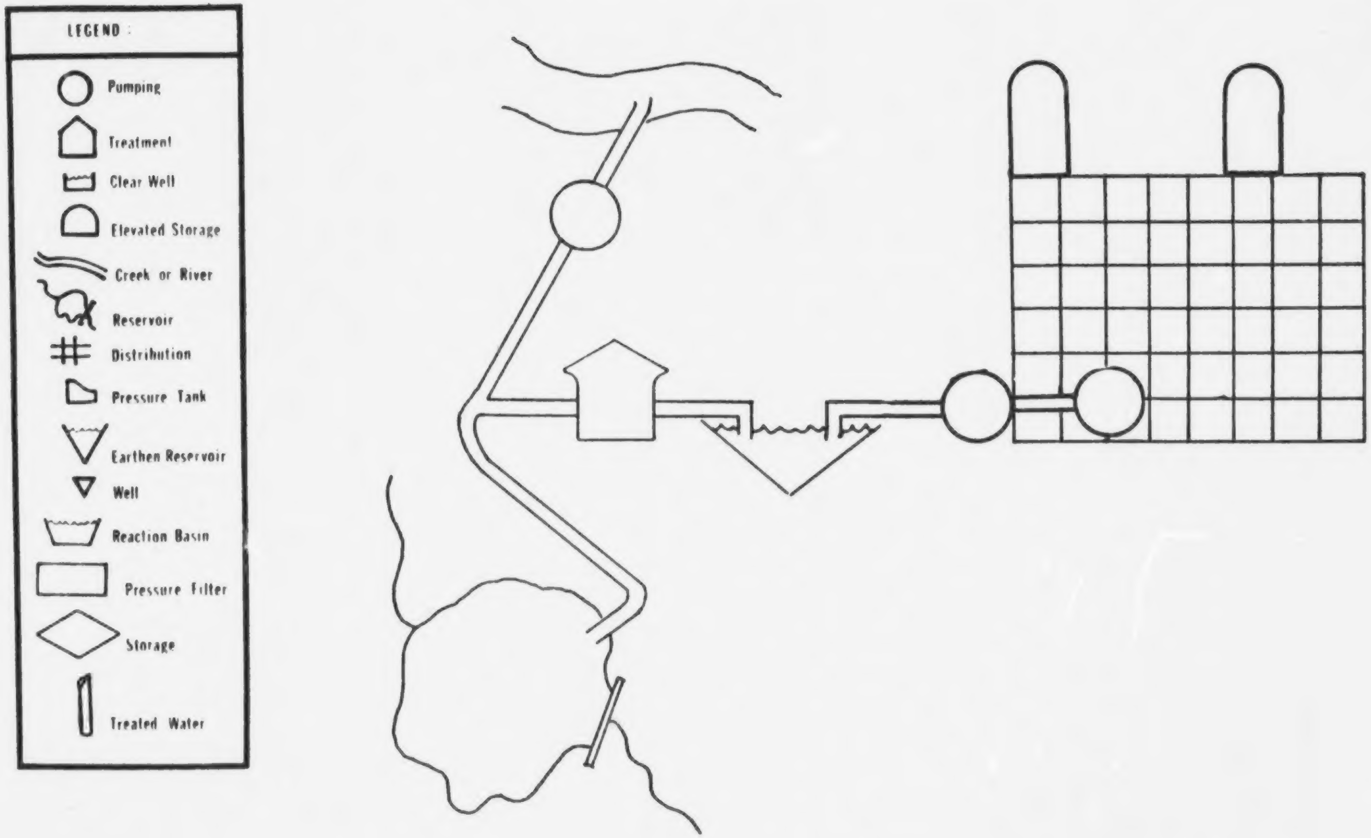

Figure 3. Simplified schematic diagram of Downingtown Water Utility.

schematic diagram of the Downingtown Water Utility. The processed data are in Appendix A.

GREAT VALLEY WATER COMPANY

Location and Operation

The Great Valley Water Company is a privately owned utility with its headquarters in Malvern, Pennsylvania, 15 miles west of Philadelphia. The water system serves a population of approximately 16,500 in an estimated 40-square mile area. This area includes all or part of nine townships. During the period from 1966 through 1975, the RPW for the utility increased 560 percent from 58 mil gal in 1966 to 383 mil gal in 1975. In 1975, the average cost for RPW was $840/mil gal not considering the specialized taxes associated with the private utility. These taxes amounted to $26/mil gal, thus increasing the cost with special taxes to $867/mil gal. Of this amount 67 percent was O&M expense and the remainder was depreciation, interest, and taxes.

The System

The Great Valley Water Company consists of 11 independent systems including a total of 20 wells and 17 pumping stations. Water is delivered directly to the consumer from the pumping stations where the water is drawn from the wells. Chlorine is added to the water at each of the pumping stations. At three of the pumping locations there is the capability of adding Aquadine to sequester iron. Aquadine is added continuously at one station and periodically at the others, depending upon the condition of the source water. The largest of the 11 independent systems provides water to approximately one-half of the service population. This large system contains a 600,000-gal and a 300,000-gal storage tank. Two of the remaining 10 systems also have storage facilities. One of these is an 850,000-gal storage tank, and the other is a 15,000-gal storage tank. In the remaining eight systems, all water is pumped directly to the consumer from the well sites. There is no repumping.

Figure 4 is a simplified schematic diagram of the Great Valley Water Company system. The processed data are shown in Appendix A. The processed data reflect the integration of the 11 systems. The systems are independent only from the standpoint that they are not physically connected. The financial and operational records are combined. Labor hours, payroll, and chemical costs were not separately identifiable for 1966 and 1967. No records were maintained for kwh.

HONEY BROOK WATER UTILITY

Location and Operation

The Honey Brook Water utility is owned and operated by the Borough of Honey Brook, Pennsylvania, located approximately 20 miles west of Philadelphia. The water supply system serves a population of approximately

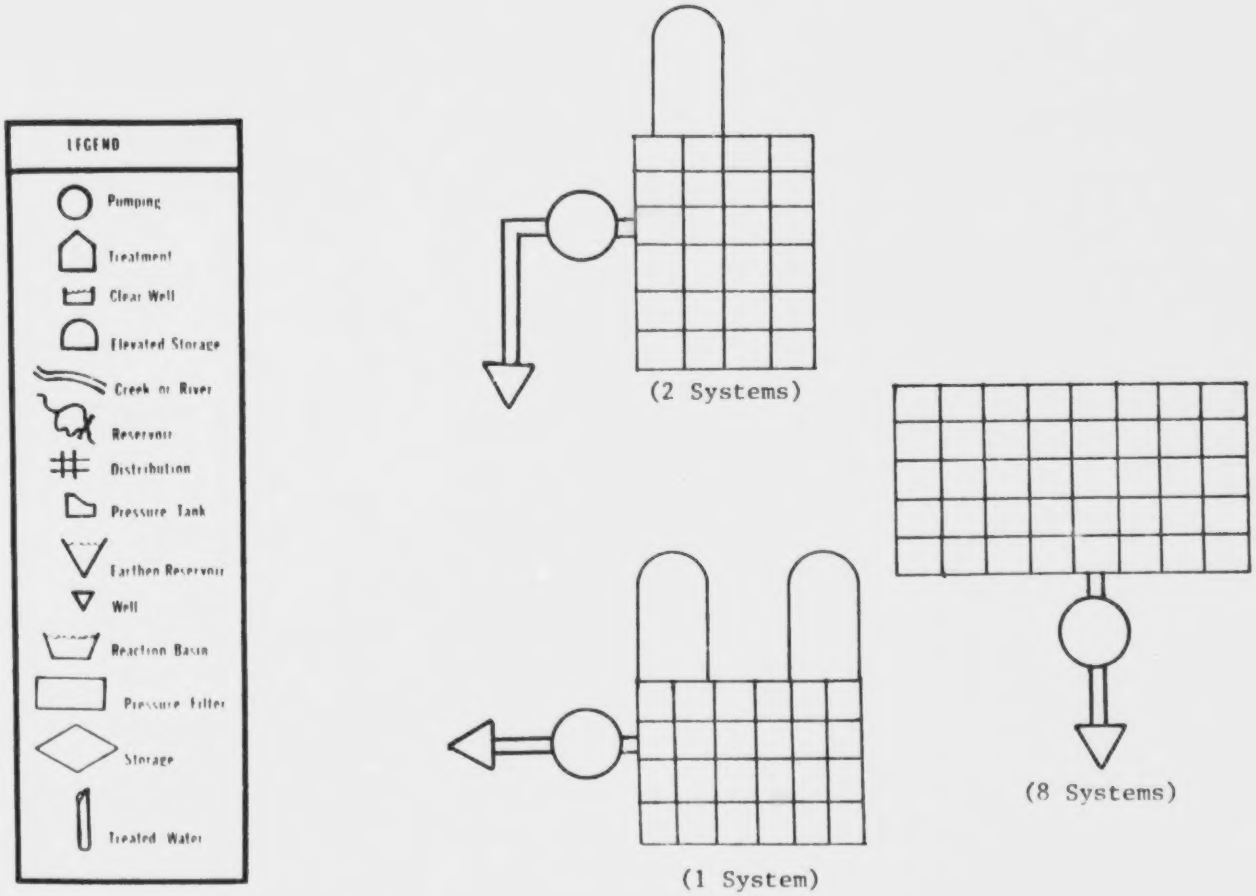

Figure 4. Simplified schematic diagram of Great Valley Water Company system.

1,400 in a 0.75-square mile service area. During the period 1969 through 1975, the RPW for the utility increased 58 percent from 26 mil gal in 1969 to 41 mil gal in 1975. In 1975, the average cost for RPW was $401/mil gal. Of this amount, 47 percent was O&M expense and the remainder was depreciation and interest. The relatively high depreciation and interest are attributed to the fact that the system was constructed recently.

The System

Originally, the Honey Brook utility was a spring-fed gravity system with no storage facility. During 1967 and 1968, a new water system was developed. This new system consists of two well fields each containing two wells and a standpipe with a capacity of 570,000 gal. One well provides 99 percent of the water and the other wells are used as a back-up. Pumps pull the water from the well and deliver it directly to the consumers or place it in storage, depending upon the demand. All water is treated with chlorine at the well sites.

The utility has only one man on the payroll. Maintenance of the distribution system is by contract. In 1975, 416 hours of maintenance were required for the distribution system. Monitoring of the distribution operation is accomplished by telemetry. Figure 5 is a simplified schematic diagram of the Honey Brook Water Utility. The processed data are in Appendix A.

The processed data reflect information from 1969 through 1975. Data prior to this time relate to the transition effort and the old system; therefore, these data are not compatible with the information pertaining to the new system and are not included in this report. The utility does not maintain records of kwh usage.

AUDUBON WATER COMPANY

Location and Operation

The Audubon Water Company is a privately owned company with its headquarters located in Norristown, Pennsylvania, about 15 miles northwest of Philadelphia. The water system serves a population of approximately 6,700 in the Norristown area. During the period 1966 through 1975, the RPW for the utility increased 468 percent from 25 mil gal in 1966 to 142 mil gal in 1975, and the average cost for RPW was $957/mil gal. This cost does not consider the special taxes associated with private utilities. When the real property taxes are included, the cost rises to $959/mil gal. Of this amount, 61 percent was for O&M expense and the remainder was depreciation, interest, and taxes. In 1973, the amount of interest paid by the utility increased tenfold from approximately $2,000 to $20,000 a year. The increased interest expense reflects the acquisition of a long-term debt in the principal amount of $352,000 at 9.5 percent which was required in mid-1973 for expansion.

The System

The Audubon Water Company operates two independent water systems, one

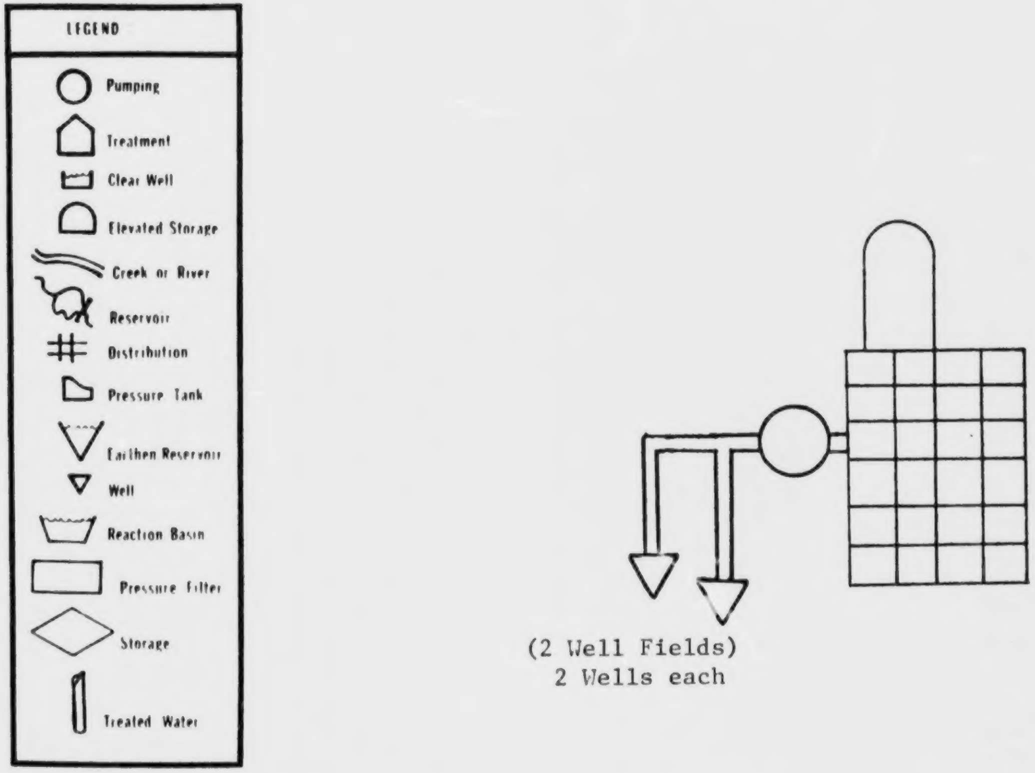

Figure 5. Simplified schematic diagram of Honey Brook Water Utility.

with three wells and the other with seven wells. The water is drawn from the ground and distributed into the system in one operation by pumps at the well sites. There is no storage. All water is chlorinated at the well site. Figure 6 is a simplified schematic diagram of the Audubon water system. The processed data are in Appendix A.

From the standpoint of total cost, the financial records of the Audubon Water Company were complete for the last 10 years. Prior to 1972, however, cost could not be identified by categories of support services, acquisition, treatment, and distribution; therefore, only total cost values are shown prior to 1972. Payroll cost and man-hours prior to 1973 were not available, and kwh were not maintained prior to 1974.

MANASSAS WATER UTILITY

Location and Operation

The Manassas Water Utility is owned and operated by the City of Manassas, Virginia, approximately 25 miles southwest of Washington, D. C. The water system serves a population of approximately 15,000 in an 8.0-square mile service area. During the period 1972 through 1975, the RPW for the utility increased 20 percent from 378 mil gal for 1972 to 455 mil gal for 1975. In 1975, the average cost for RPW was $1,423/mil gal. Of this amount, 39 percent was O&M expense and the remainder was depreciation and interest. The high depreciation and interest are attributed to the recent major capital expenditure discussed in the following subsection.

The System

Originally, Manassas Water Utility acquired its source water from wells. The old system consisted of as many as 11 wells; however, problems were encountered in using ground water because of a falling water table. Construction of a treatment plant and a new dam which created a reservoir was initiated in 1968 and completed in 1970. With the completion of the new facilities, the use of ground water was phased out.

The reservoir located on Broad Run has a capacity of 5.7 mil gal and includes 780 acres of surface area. The water from the reservoir is delivered to a nearby treatment plant which has a present capacity of 4.0 MGD and is capable of being expanded to 8.0 MGD in the future. One hundred percent of the water is subjected to the following treatment processes: 1) aeration, 2) sedimentation, 3) coagulation, 4) filtration, 5) chlorination, 6) activated carbon, and 7) fluoridation. Though not presently in use, the wells are maintained as a standby source of supply. Occasionally, well water is used for flushing operations.

Treated water is transmitted approximately 10 miles from the treatment plant to the city in a 24-inch diameter pipe. During the daytime (the only hours the treatment plant is normally operated), water is pumped directly from the treatment plant into the distribution system and into storage. A ground level reservoir holds 2.5 mil gal, and two elevated tanks hold

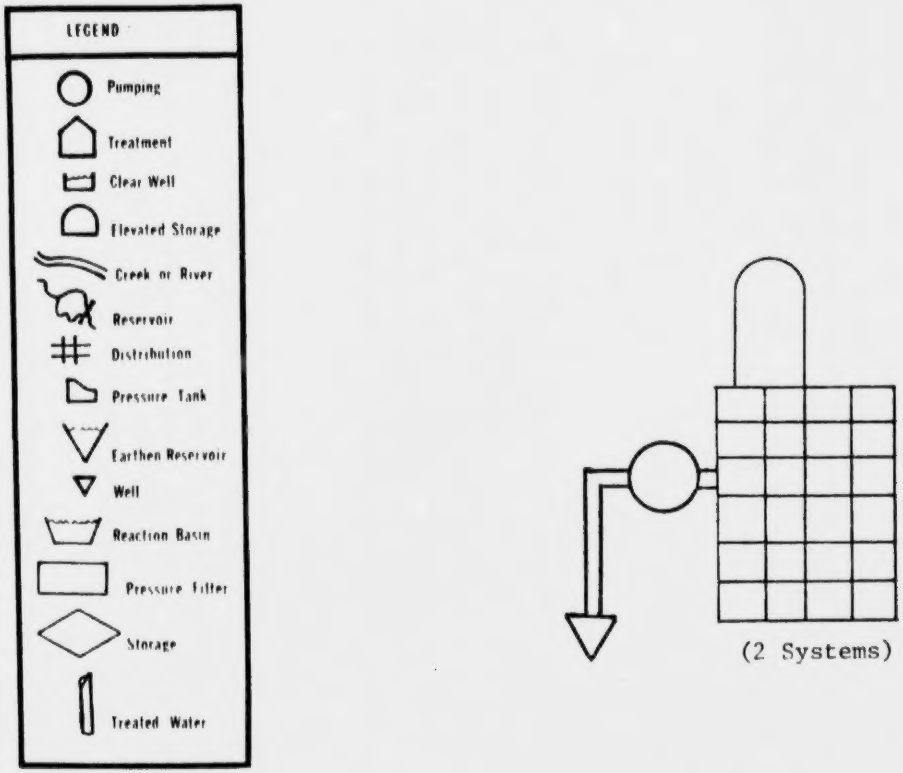

Figure 6. Simplified schematic diagram of the Audubon water system.

0.3 mil gal and 0.05 mil gal, respectively. At night, the treatment plant and pumps at the plant are usually closed down, and water is supplied into the system by pumps located at the ground level reservoir. Figure 7 is a simplified diagram of the Manassas Water Utility system. The processed data are in Appendix A.

In 1970, the utility acquired the Liberia Water System consisting of predominantly flat rate customers. The switch from ground to surface water as a source, the acquisition of the new water system with predominantly flat rate customers, and a change in the fiscal year period for accounting made the financial records prior to the year 1972 difficult to compare with the records from that point forward. For this reason, the financial information documented in this report is for the period 1972 through 1975 only. Treatment cost, payroll, and power cost were identifiable as separate items for only the two latest years. No record of kwh was maintained.

MANASSAS PARK WATER UTILITY

Location and Operation

The Town of Manassas Park, Virginia, located approximately 20 miles southwest of Washington, D. C., owns and operates the water supply system. The system serves a population of approximately 6,800 in a 2.0-square mile service area. During the period 1966 through 1975, the RPW for the utility increased 37 percent from 75 mil gal in 1965 to 103 mil gal in 1974. In 1974, the average cost for RPW was $616/mil gal. Of this amount, 51 percent was O&M expense and the remainder was depreciation and interest.

The System

The Manassas Park Water Utility consists of four wells, an elevated storage tank, and a distribution system. No treatment of any type is performed on the water distributed into the system. In the processed data shown in Appendix A, the water identified as treated water is actually the amount of water withdrawn from the wells and pumped into the distribution system.

The system maintains a connection with the Manassas Water utility in order to obtain water under emergency conditions; however, this connection is seldom used. Figure 8 is a simplified schematic diagram of the Manassas Park water system.

From an operations and accounting standpoint, the Manassas Park Water Utility is combined with the sewer system and in some cases with the streets sanitation, and parks departments, all served by one maintenance shop. Because of this, it was necessary to make some assumptions in identifying specific costs. Since no treatment occurs, no costs are incurred in the treatment category. The utility does not maintain records of kwh used.

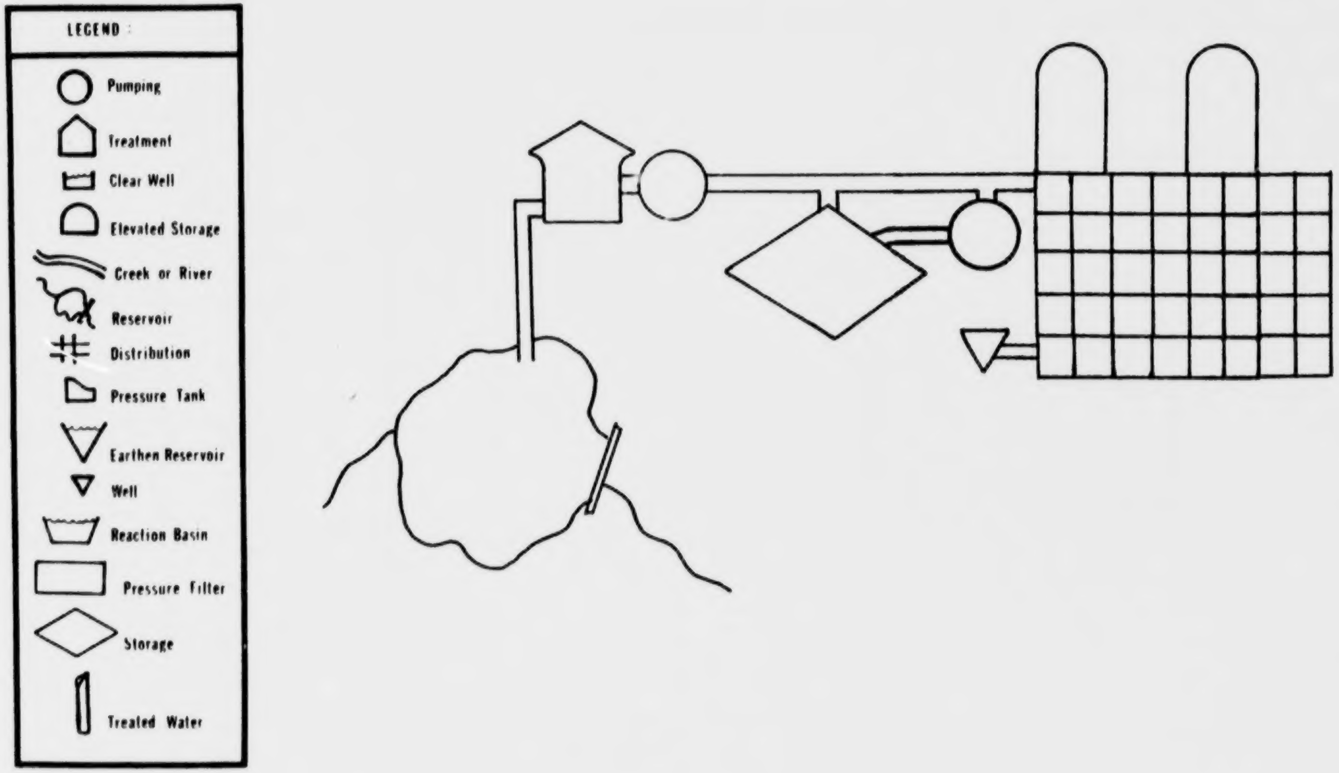

Figure 7. Simplified schematic diagram of Manassas Water Utility system.

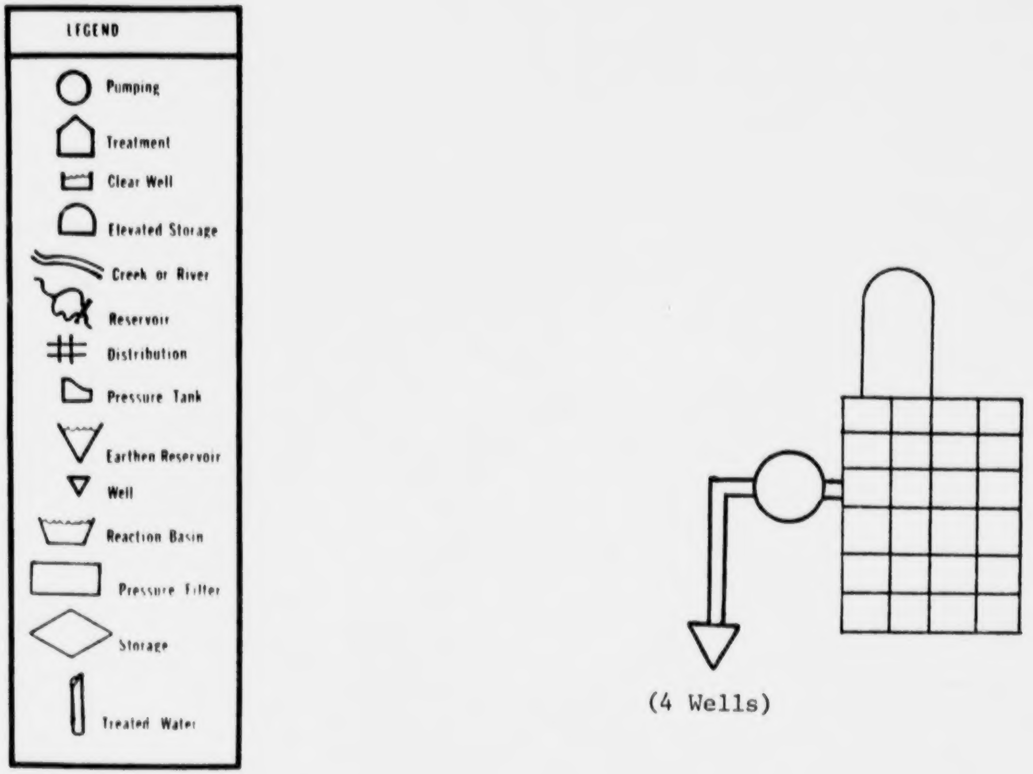

Figure 8. Simplified schematic diagram of Manassas Park Water Utility.

CULPEPER WATER UTILITY

Location and Operation

The Culpeper Water Utility is owned and operated by the City of Culpeper, Virginia, approximately 60 miles southwest of Washington, D. C. The water system serves a population of approximately 7,500 in an 8.0-square mile service area. During the period 1966 through 1975, the RPW of the utility increased 78 percent from 146 mil gal in 1966 to 260 mil gal in 1975. In 1975, the average cost for RPW was $948/mil gal. Of this amount, 73 percent was O&M expense and the remainder was depreciation and interest.

The System

The Culpeper Water Utility acquires all water from a free-flowing stream through an intake located at its treatment plant. Two reservoirs located upstream from the treatment facility stabilize the flow of the stream. The utility incurs no operating or depreciation expenses from the reservoirs since they were built with federal funds for flood control. A small well located at the treatment plant provides raw water into the water supply intake when additional water is required. The small well operates approximately 20 days per year and supplies about one percent of the total water. There is also a larger well for use in an emergency. There has been no occasion to use this larger well in 15 years.

Raw water from the intake flows directly into the treatment plant. All water is subjected to the following treatment processes: 1) sedimentation, 2) coagulation, 3) filtration, 4) chlorination, and 5) flouridation. The system experiences a periodic iron and manganese problem. This is a seasonal problem and is believed to be a result of eutrophic conditions found in the lake located about one mile above the intake. The iron and manganese often impart a yellowish-brown-to-black color to the water and tend to precipitate in the mains.

All pumping is accomplished at the treatment plant. The pumps move water into the distribution system under pressure and deliver it directly to the consumer. Additional water is stored in three separate 0.5-mil gal elevated storage tanks.

The Culpeper Water Utility converted to a computerized billing system in mid-FY 1973-74, providing complete billing records for FY 1974-75. These records show RPW amounted to 259,844 mil gal as compared with the treatment plant records for the same year showing 477,010 mil gal of water treated. These figures indicate a water loss of 46 percent which is unusually high.

Figure 9 is a simplified schematic diagram of the Culpeper water system. The processed data acquired from the system are in Appendix A. The utility did not maintain a record of kwh usage.

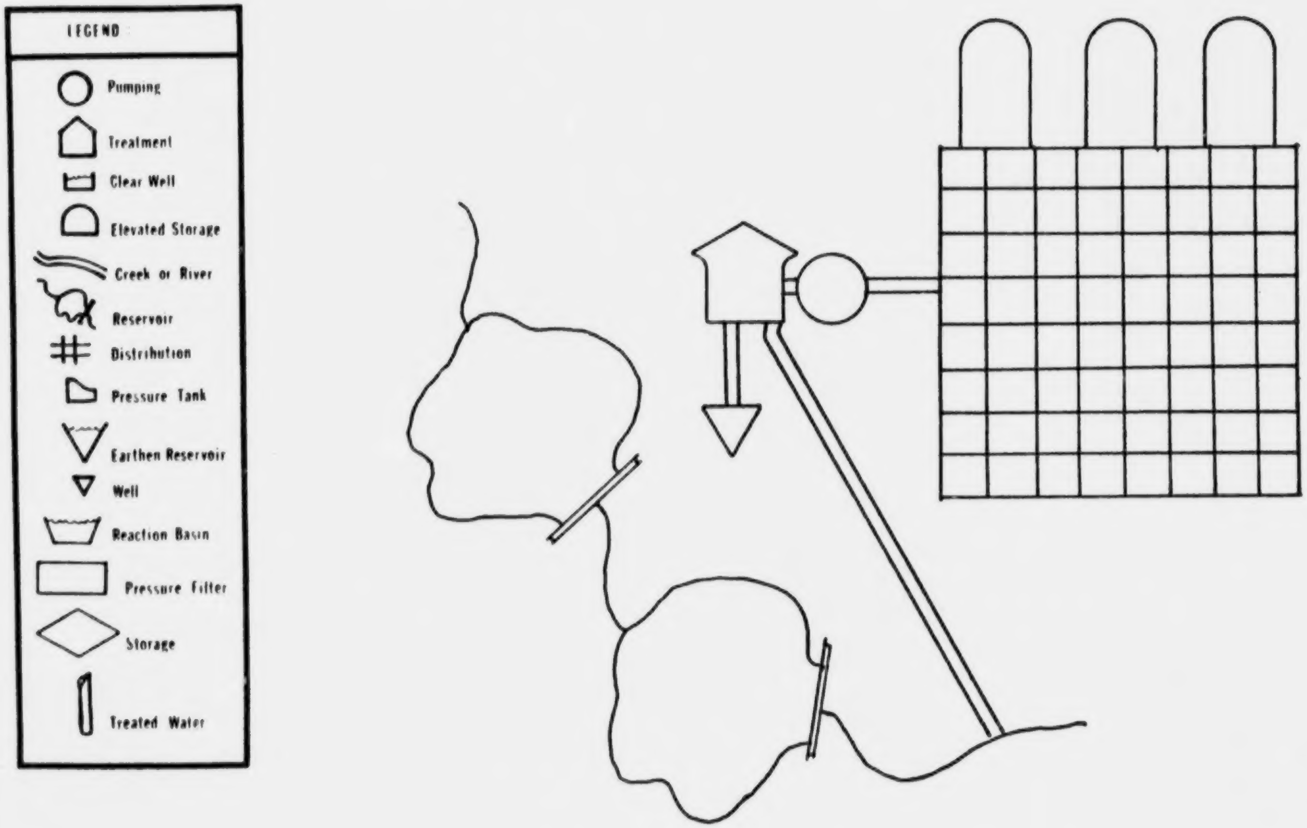

Figure 9. Simplified schematic diagram of Culpeper Water Utility.

SECTION 4

REGION V WATER UTILITIES

The EPA Region V Water Supply Office elected to have four small water supply systems in the Cincinnati area and five in the Chicago area participate in the program. The specific utilities were selected by the EPA in conjunction with appropriate state water supply personnel. Four of the water supply utilities in the Chicago area are in Illinois and one in Indiana. All of the utilities in the Cincinnati area are in Ohio. The utilities selected to participate in the program are as follows.

1. West Dundee Water Utility
   West Dundee, IL

2. Algonquin Water Utility
   Algonquin, IL

3. Lake Zurich Water Utility
   Lake Zurich, IL

4. Burlington Water Utility
   Burlington, IL

5. Lowell Water Utility
   Lowell, IN

6. Lebanon Water Utility
   Lebanon, OH

7. Batavia Water Utility
   Batavia, OH

8. Williamsburg Water Works
   Williamsburg, OH

9. Warren County Water Department
   Lebanon, OH

All nine utilities were visited and cooperated in the program; however, adequate data to accomplish the objectives of this program were available at only the first seven of the utilities listed above. The processed data for the seven utilities are shown in Appendix B. Each of the EPA Region V utilities for which data were processed is described in this section of the report. Table 3 provides a general profile of each utility.

WEST DUNDEE WATER UTILITY

Location and Operation

The West Dundee Water Utility is owned and operated by the City of West Dundee, Illinois, located approximately 20 miles west of Chicago. The water system serves a population of approximately 3,500 in a 0.7-square mile service area. During the period 1969 through 1975, the RPW for the utility increased 12 percent from 112 mil gal in 1969 to 125 mil gal in 1975. In 1975, the average cost for RPW was $373/mil gal. Of this amount, 79 percent was O&M expense and the remainder was depreciation.

The System

The West Dundee Water Utility draws its source water from two well fields. Ninety-seven percent of the water utilized in the system comes from one well field with the other system primarily providing back-up. At the primary well site, the raw water is chlorinated, fluoridated, and aerated. At the other well site, the water is chlorinated and fluoridated only. The water is pumped directly from the wells into the distribution system. There is also a 100,000-gal elevated storage tank within the distribution system. Figure 10 is a simplified schematic diagram of the West Dundee water system. The processed data are in Appendix B.

A combined water and sewer fund is maintained in West Dundee. Information was available from only 1969 forward and was in such a format that it was difficult to identify costs to the level of support services, acquisition, treatment, and distribution. Because of this, only total O&M cost is provided for all years except the latest year, 1975. The utility did not maintain records of labor man-hours. Information such as power cost and kwh were available for only the year prior to 1969 and are included in the processed data.

ALGONQUIN WATER UTILITY

Location and Operation

The Algonquin Water Utility is owned and operated by the City of Algonquin, Illinois, located approximately 20 miles west of Chicago. The water system serves a population of about 4,000 in a 2.5-square mile service area. During the period 1965 through 1974, the RPW for the utility increased by 39 percent from 70 mil gal in 1965 to 97 mil gal in 1974. In 1974, the average cost for RPW was $115/mil gal. Of this amount, 84 percent was O&M

TABLE 3. REGION V - SMALL SYSTEMS UTILITIES PROFILE

Utility	Population x 1000	Area Sq Mi	Accounts x 1000	RPW Mil Gal	Percent Purchased	Source (Ground/ Surface
West Dundee	3.5	0.7	1.0	125	0	G
Algonquin	4.0	2.5	1.2	97	0	G
Lake Zurich	6.8	3.5	2.0	249	0	G
Burlington	0.4	0.3	0.1	21	0	G
Lowell	5.3	4.0	1.6	152	0	G
Lebanon	10.0	6.7	2.5	246	0	G
Batavia	2.1	2.1	0.6	47	0	S

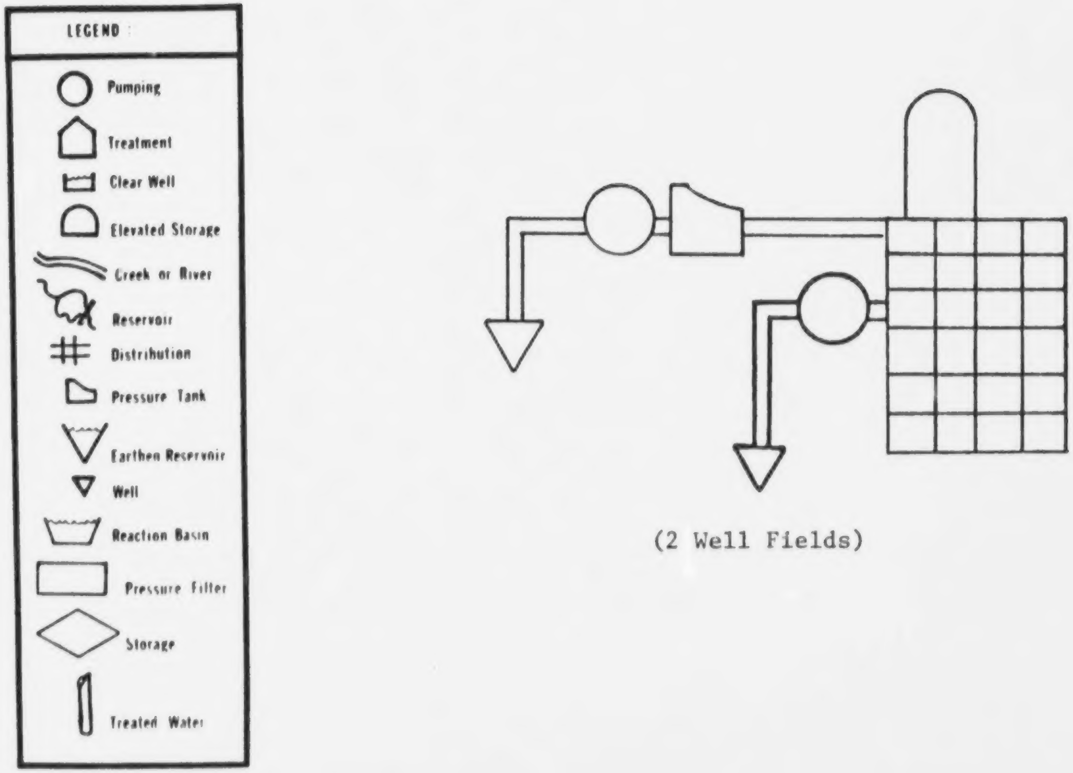

Figure 10. Simplified schematic diagram of West Dundee Water Utility.

expense and the remainder was depreciation and interest.

The System

The Algonquin Water Utility acquires its source water from two well fields. The water from one well field flows into an infiltration gallery and then into a 40,000-gal collection reservoir. During this process, chlorine, fluoride, and polyphosphate are added. High service pumps draw from the collection reservoir and pump the water into the distribution system. At the other well field, water is pumped directly into the distribution system after chlorine and polyphosphate are added. The distribution system contains three standpipes which have a storage capacity of 450,000 gal, 390,000 gal, and 175,000 gal, respectively. Figure 11 is a simplified schematic diagram of the system. The processed data appear in Appendix B.

Cost data were available over the entire 10-year period, but the record system was not adequate to identify these costs as support services, acquisition, treatment, or distribution cost for any given year; therefore, the O&M costs are given as annual totals only on the cost summary report normally produced to identify the cost/mil gal of support services, acquisition, treatment, and distribution. Man-hours were available for only the two latest years and kwh records for only the latest year.

LAKE ZURICH WATER UTILITY

Location and Operation

The Lake Zurich Water Utility is owned and operated by the Village of Lake Zurich, Illinois, located about 20 miles west of Chicago. The water system serves a population of approximately 6,800 in a 3.5-square mile service area. During the period 1968 through 1975, the RPW for the utility increased 38 percent from 181 mil gal in 1968 to 249 mil gal in 1975. In 1975, the average cost for RPW was $781/mil gal. Of this amount, 44 percent was O&M expense and the remainder was depreciation and interest.

The System

The Lake Zurich utility acquires its source water from four wells. Under normal operating conditions, three of the four wells provide an adequate source of water. The water is pulled from the wells, treated with chlorine and polysulfate, and pumped directly into the distribution system. The distribution system contains three storage facilities: two elevated tanks with capacities of 58,000 and 500,000 gal respectively, and a 500,000-gal standpipe. Figure 12 is a simplified schematic diagram of the Lake Zurich water system. The processed data appear in Appendix B.

The financial records of the utility were maintained in a format integrating water utility costs with the sewer system and other municipal costs. Because of this, it was difficult to identify costs to the level of support services, acquisition, treatment, and distribution. Only the total cost was obtained for the years 1969 through 1974. More detailed records were

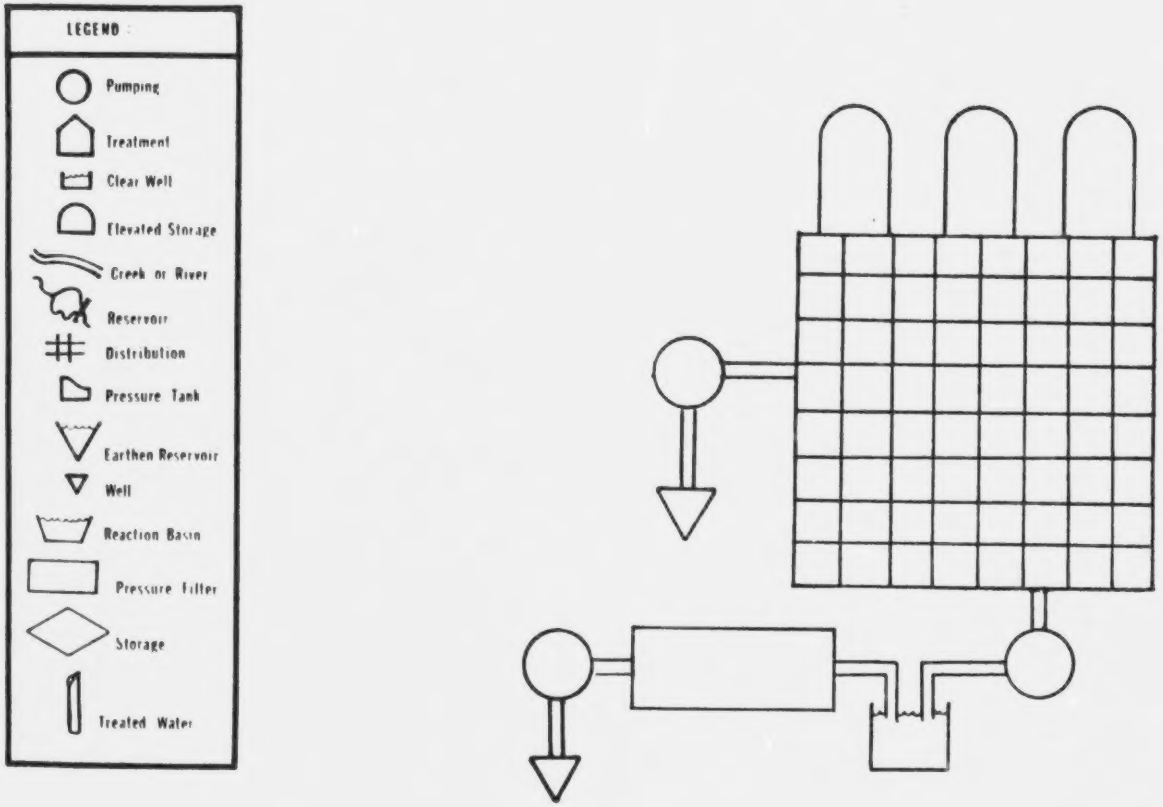

Figure 11. Simplified schematic diagram of Algonquin Water Utility system.

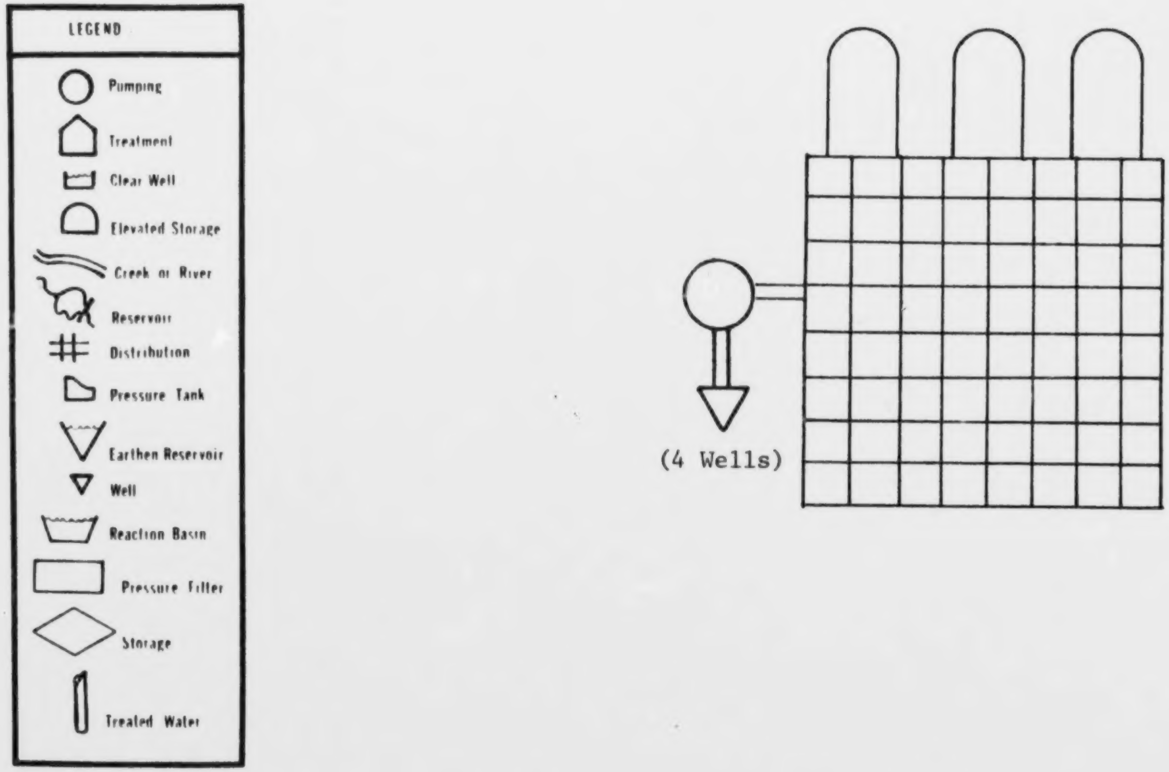

Figure 12. Simplified schematic diagram of Lake Zurich Water Utility.

available for the latest year (1975) allowing for the allocation of costs. Payroll cost and man-hours were not available for any year; power cost and utilization of kwh were available for the latest year only.

BURLINGTON WATER UTILITY

Location and Operation

The Burlington Water Utility is owned and operated by the Village of Burlington, Illinois, located 20 miles west of Chicago. The water system serves a population of 384 in a 0.25-square mile service area. During the period 1966 through 1975, the RPW of the utility decreased 9 percent from 22 mil gal in 1966 to 20 mil gal in 1975. In 1975, the average cost for RPW was $638/mil gal. Of this amount, 82 percent was O&M expense and the remainder was depreciation.

The System

The Burlington Water Utility obtains its source water from one well. The raw water is treated with chlorine, Aquadine, and fluoride and then stored in a 55,000-gal ground storage reservoir. The water is pumped from the reservoir through a 3,500-gal pressure tank and into the distribution system. Figure 13 is a simplified schematic presentation of the Burlington water system. The processed data are in Appendix B.

Records were not maintained of the number of kwh utilized by the utility. Chemical costs prior to 1969 could not be separated or identified.

LOWELL WATER UTILITY

Location and Operation

The Lowell Water Utility is owned and operated by the City of Lowell, Indiana, located approximately 15 miles south of Gary, Indiana. The water system serves a population of approximately 5,300 in a four-square mile service area. During the period 1966 through 1975, the RPW of the utility increased 65 percent from 92 mil gal in 1966 to 152 mil gal in 1975. In 1975, the average cost for RPW was $1,231/mil gal. Of this amount, 76 percent was O&M expense and the remainder was depreciation and interest.

The System

The Lowell utility acquires water from three wells, each approximately 280 feet deep. The water is pumped from the wells, aerated, chlorinated, and stored in one of two 60,000-gal reaction basins. Three high service pumps move the water from the basins through pressure filters and into the distribution system. The purpose of the sand pressure filters is to remove sulfur from the water. There are two 200,000-gal elevated storage tanks in the distribution system.

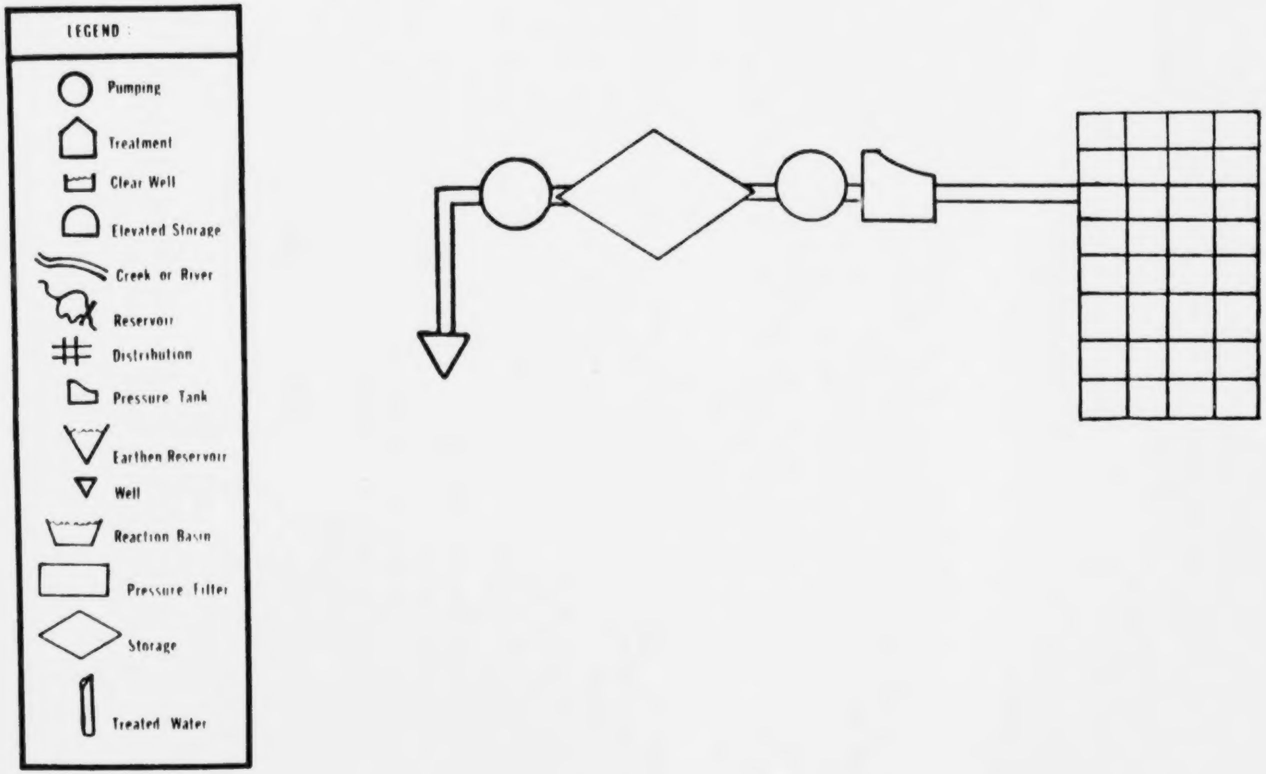

Figure 13. Simplified schematic presentation of Burlington Water Utility system.

A simplified schematic diagram of the system is shown in Figure 14 and the processed data are in Appendix B.

The Lowell Water Utility uses a single entry bookkeeping system to document financial information. Records for total costs were available for the entire time period of the study; however, sufficient details to allocate expenses to support services, acquisition, treatment, and distribution were available for only 1974 and 1975. A record of kwh was maintained; however, the 1967 data were not available.

LEBANON WATER UTILITY

Location and Operation

The Lebanon Water Utility is owned and operated by the City of Lebanon, Ohio, located approximately 15 miles northeast of Cincinnati. The water system serves a population of approximately 10,000 in a 6.7-square mile service area. During the period 1966 through 1975, the RPW of the utility decreased 18 percent from 299 mil gal in 1966 to 246 mil gal in 1975. In 1975, the average cost for RPW was $1,218/mil gal. Of this amount, 54 percent was O&M expense and the remainder was depreciation and interest.

The System

The Lebanon Water Utility acquires its source water from the ground. At the time of the study, the operation included six wells; however, two were scheduled to be closed down. Water is pumped from the wells into a treatment plant where it is chlorinated and passed through sand filters and a coke aerator. The water then flows into a 300,000-gal clear well. High service pumps lift the water from the clear well into the first pressure level area of the distribution system. Two of four booster pumps located at the clear well move water into the second pressure level area and one moves water directly from the first level to the third pressure level. One booster pump is on standby. Two additional pumps located in the system move water from the second pressure level into the third pressure level area of the distribution system. The three storage facilities in the system consist of two 0.5-mil gal standpipes and one 1.0-mil gal storage tank.

Figure 15 is a simplified diagram of the Lebanon water system. The processed data are in Appendix B.

In general, all necessary data were available; however, the total cost for chemicals was identifiable for only the years 1974 and 1975.

BATAVIA WATER UTILITY

Location and Operation

The Batavia Water Utility is owned and operated by the Village of Batavia, Illinois, located approximately 25 miles west of Chicago. The water

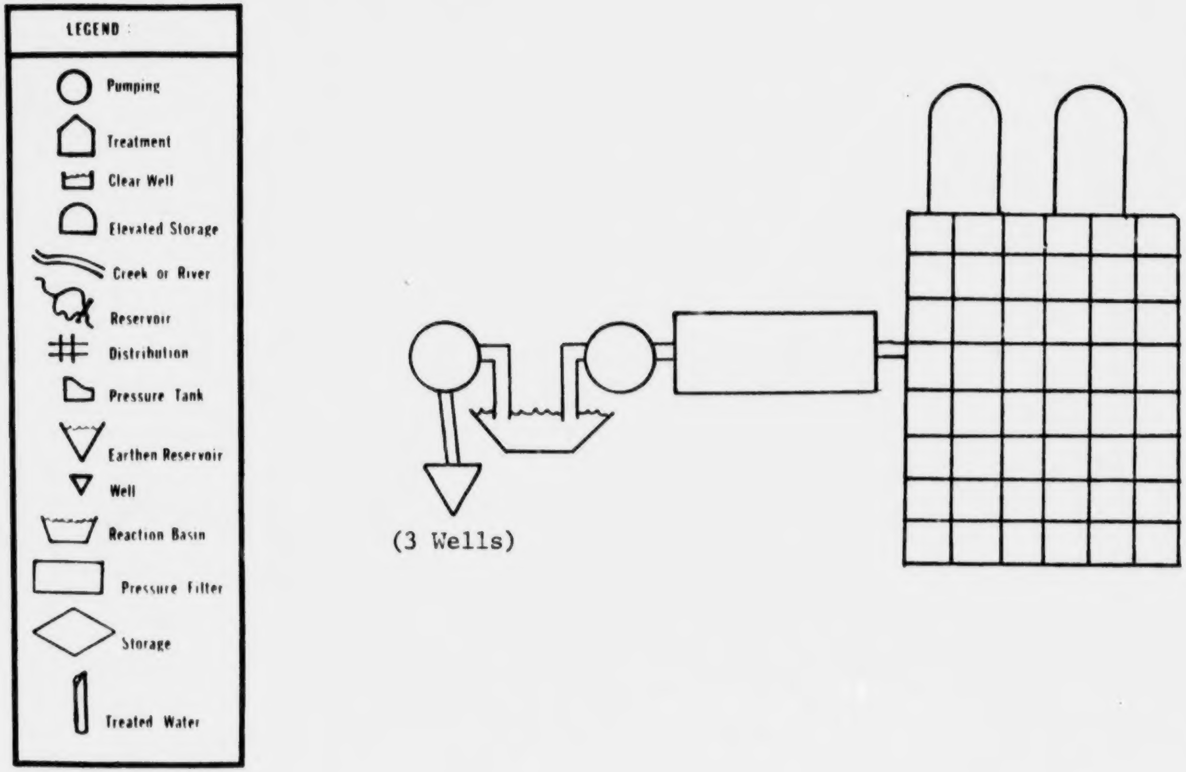

Figure 14. Simplified schematic diagram of Lowell Water Utility.

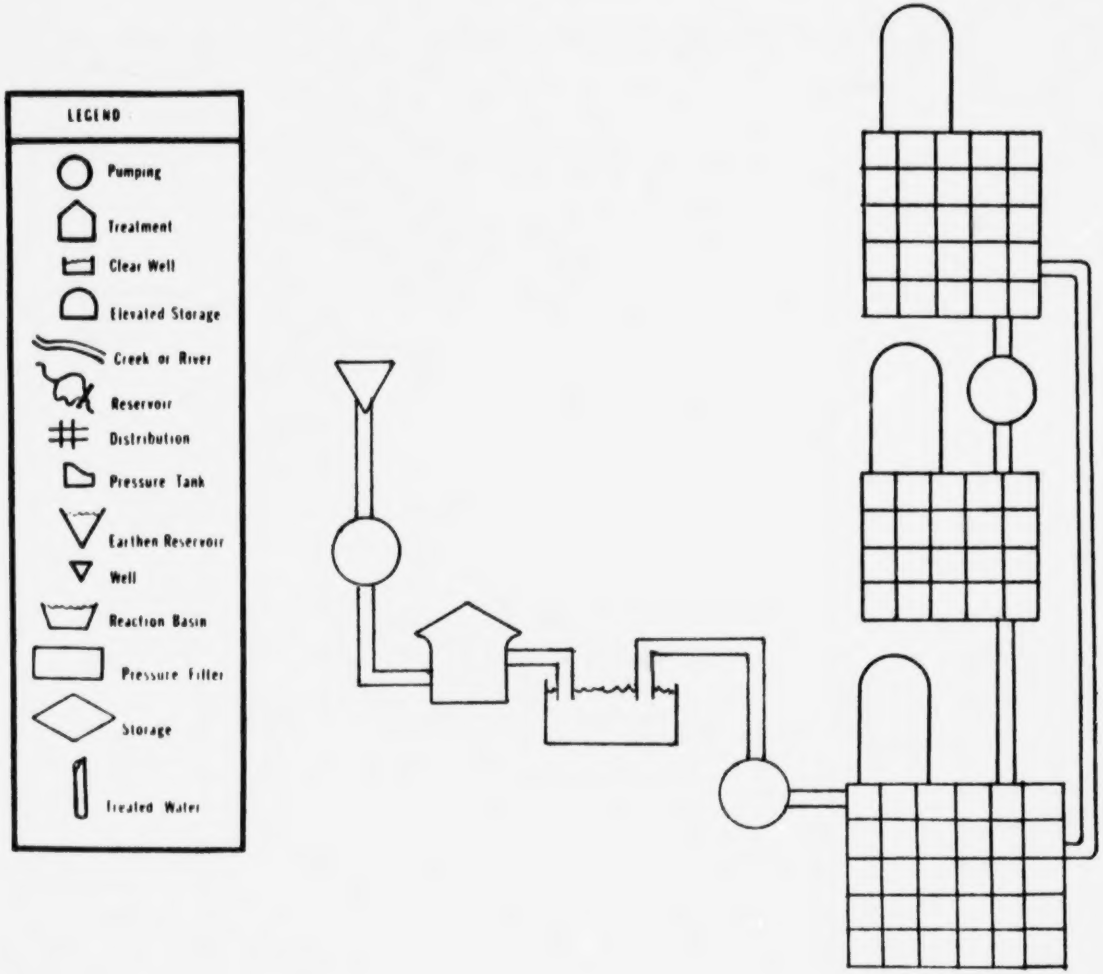

Figure 15. Simplified diagram of Lebanon Water Utility.

system serves a population of about 2,100 in a 2.10-square mile service area. During the period 1966 through 1975, the RPW of the utility decreased by 6 percent from 50 mil gal in 1966 to 47 mil gal in 1975. In 1975, the average cost of RPW was $1,366/mil gal. Of this amount, 68 percent was O&M expense and the remainder was depreciation and interest.

The System

The Batavia water system uses surface water drawn from a natural stream by three intake pumps with a total capacity of 350 gal/minute. All water is subjected to the following treatment processes: 1) sedimentation, 2) filtration, and 3) chlorination. The intake pumps move the raw water directly into one of two 90,000-gal carbonation chambers which have a four-hour retention time. The water then flows through filters and into a 150,000-gal clear well. There are four filter beds, each with 96 square feet of surface area. Two 750-gal/ minute high service pumps draw the water from the clear well and pump it into the distribution system. Storage facilities in the distribution system consist of two ground storage tanks with a capacity of 150,000 gal and 100,000 gal, respectively.

A simplified schematic presentation of the system is shown in Figure 16 and the processed data are in Appendix B.

Documented cost information was available for the years 1970 through 1975; however, sufficient information to identify costs to the level of support services, acquisition, treatment, and distribution was available for only the two latest years. Some information, such as water consumption and manhours, was available for the entire 10-year period and is included in the computer reports.

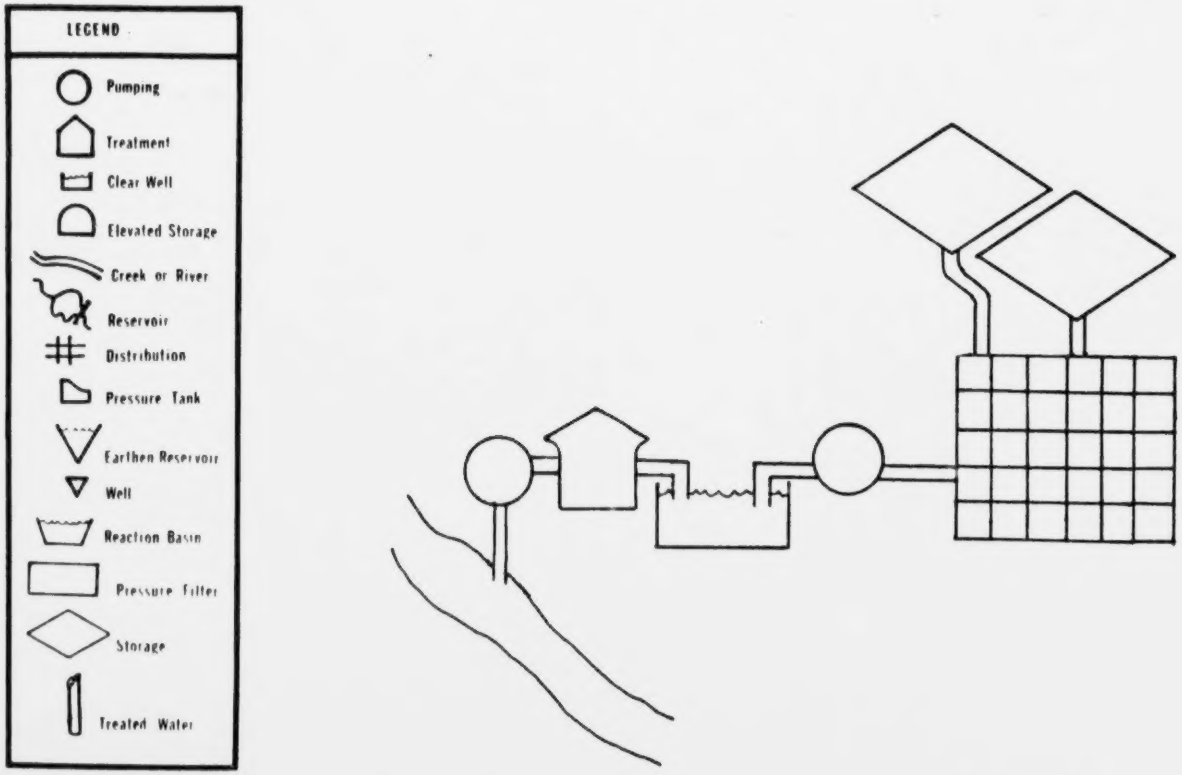

Figure 16. Simplified schematic presentation of Batavia Water Utility.

SECTION 6

REGION VI WATER UTILITIES

The EPA Region VI Water Supply Office elected to have 10 small water utilities in the State of Texas participate in this program. These utilities were selected by the EPA Regional Office in conjunction with Texas state water personnel. The following utilities were selected for participation.

1. Belton Water Utility
   Belton, TX

2. Georgetown Water Utility
   Georgetown, TX

3. Taylor Water Utility
   Taylor, TX

4. Bell County WCID #1
   Killeen, TX

5. Killeen Water Utility
   Killeen, TX

6. Denton Water Utility
   Denton, TX

7. Colony MUD #1
   Denton County, TX

8. Dallas County WCID #6
   Dallas, TX

9. Cockrell Hill Water Utility
   Cockrell Hill, TX

10. Lewisville Water Utility
    Lewisville, TX

All 10 utilities were visited and adequate data were collected at the first nine utilities listed to accomplish the objectives of this program. The processed data for these nine utilities are included in Appendix C. Each EPA Region VI utility for which data were processed is described in this section of the report. Table 4 provides a general profile of each utility.

BELTON WATER UTILITY

Location and Operation

The Belton Water Utility is owned and operated by the City of Belton, Texas located 20 miles west of Temple, Texas. The water system serves a population of approximately 10,650 in a 6.88-square mile service area. During the period 1970 through 1975, the RPW for the utility increased 31 percent from 273 mil gal for 1970 to 358 mil gal for 1975. In 1975, the average cost for RPW was $778/mil gal. Of this amount, 93 percent was O&M expense and the remainder was depreciation and interest.

The System

Originally, the Belton Water Utility was a well system; however, in 1970 the system started purchasing treated water from Bell County WCID #1. The contract to purchase water from the Bell County system requires a fixed monthly payment plus a fee/1000 gal. In 1975, the monthly fixed payment was $6,190.19 and the fee was $0.095/1000 gal. The total amount paid for purchased water that year was $113,327.

Bell County WCID #1 owns and maintains a 4.0-mil gal storage tank. Water flows by gravity through a four-mile pipeline to the City system. The Belton utility maintains an 800,000-gal ground storage tank for emergency purposes. Basically, the water flows by gravity from the WCID #1 storage tank directly to the consumer. The water is rechlorinated by the Belton utility after it is received from Bell County. Figure 17 is a simplified schematic presentation of the Belton water system. Processed data are in Appendix C.

The data obtained from the utility begin with the year 1970, concurrent with the establishment of the new water system utilizing purchased water. The amount of treated water (purchased water) was available for the latest year only.

GEORGETOWN WATER UTILITY

Location and Operation

The Georgetown Water Utility is owned and operated by the City of Georgetown, Texas, located approximately 20 miles southwest of Temple. The system serves a population of about 10,000 in a 6.02-square mile service area.

TABLE 4. REGION VI - SMALL SYSTEMS UTILITIES PROFILE

Utility	Population x 1000	Area Sq Mi	Accounts x 1000	RPW Mil Gal	Percent Purchased	Source (Ground/ Surface
Belton	10.6	6.9	3.3	358	100%	S
Georgetown	10.0	6.0	2.8	314	0	G
Taylor	9.6	10.2	3.5	286	0	G
Bell County WCID #1	--	--	0.042	5,579	100%	S
Killeen	40.4	2.8	11.0	1,601	100%	S
Denton	46.8	32.3	11.6	2,318	100%	S (98%)
Colony MUD #1	1.6	0.4	0.5	43	0	G
Dallas County WCID #6	13.8	7.0	3.8	337	100%	S
Cockrell Hill	3.5	1.0	1.0	102	100%	S

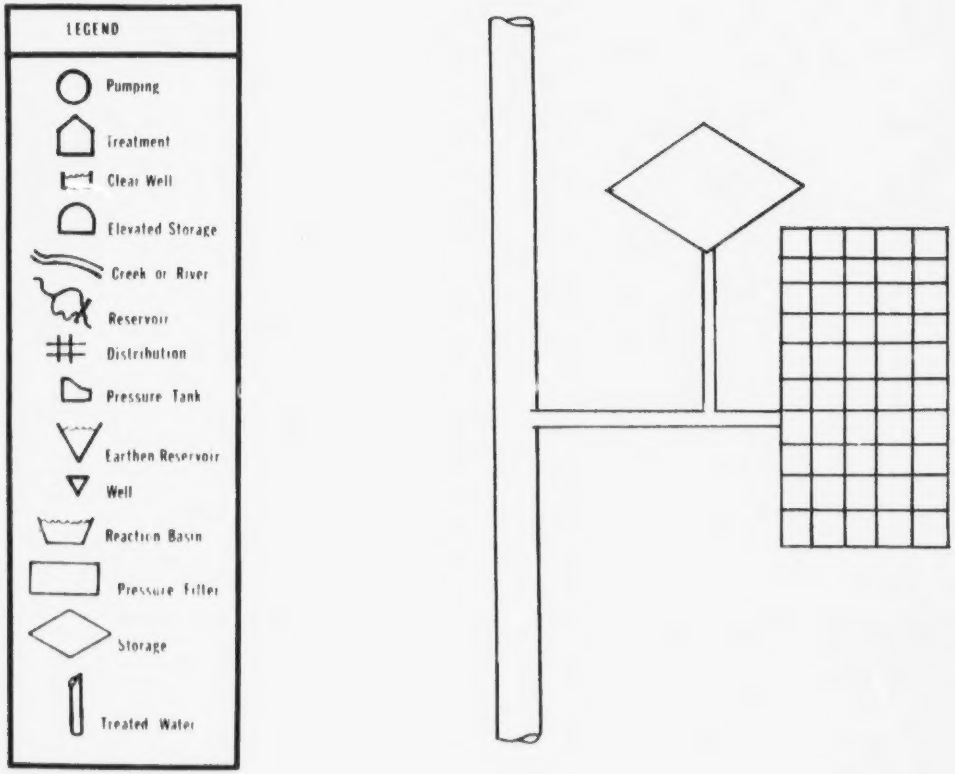

Figure 17. Simplified schematic presentation of Belton Water Utility system.

percent from 462 mil gal in 1971 to 314 mil gal in 1975. In 1975, the average cost for RPW was $500/mil gal. Of this amount, 79 percent was O&M expense and the remainder was depreciation and interest.

The System

The Georgetown Water Utility acquires its source water from four wells. The water is pumped from the wells, chlorine is added, and the water is moved to a 200,000-gal clear well. From the clear well, water is pumped into a 750,000-gal storage tank and into the distribution system by four pumps all located at the clear well.

Figure 18 is a simplified schematic presentation of the Georgetown water system. The processed data are in Appendix C.

Cost data for O&M were available from 1968; however, the amount of RPW was not available prior to 1971. Chemical cost was not identifiable as a separate line item. Power cost and kwh were available for the two latest years only.

TAYLOR WATER UTILITY

Location and Operation

The Taylor Water Utility is owned and operated by the City of Taylor, Texas, located approximately 20 miles south of Temple. The water system serves a population of approximately 9,600 in a 10.24-square mile service area. During the period from 1966 through 1975, the RPW for the utility increased 54 percent from 186 mil gal in 1966 to 286 mil gal in 1975. In 1975, the average cost for RPW was $809/mil gal. Of this amount, 60 percent was O&M expense and the remainder was depreciation and interest.

The System

The utility obtains its raw water from four wells ranging in depth from 3,000 to 3,300 feet. Water is pumped from the wells to one of two ground storage reservoirs, both at one central location. Chlorine is added to the water just prior to storage. There is also a 1.0-mil gal raw water storage tank at one of the well sites and water from this tank also is pumped to the two centrally located reservoirs. Three distribution pumps move the water from the reservoirs through the distribution system. Two elevated storage tanks in the distribution system have a capacity of 400,000 and 500,000 gal, respectively.

Figure 19 is a simplified schematic diagram of the Taylor water system. The processed data are in Appendix C.

Information related to treated water (the amount of water pumped from the wells) was available for the latest year only. Records of kwh usage were available for only the last five years.

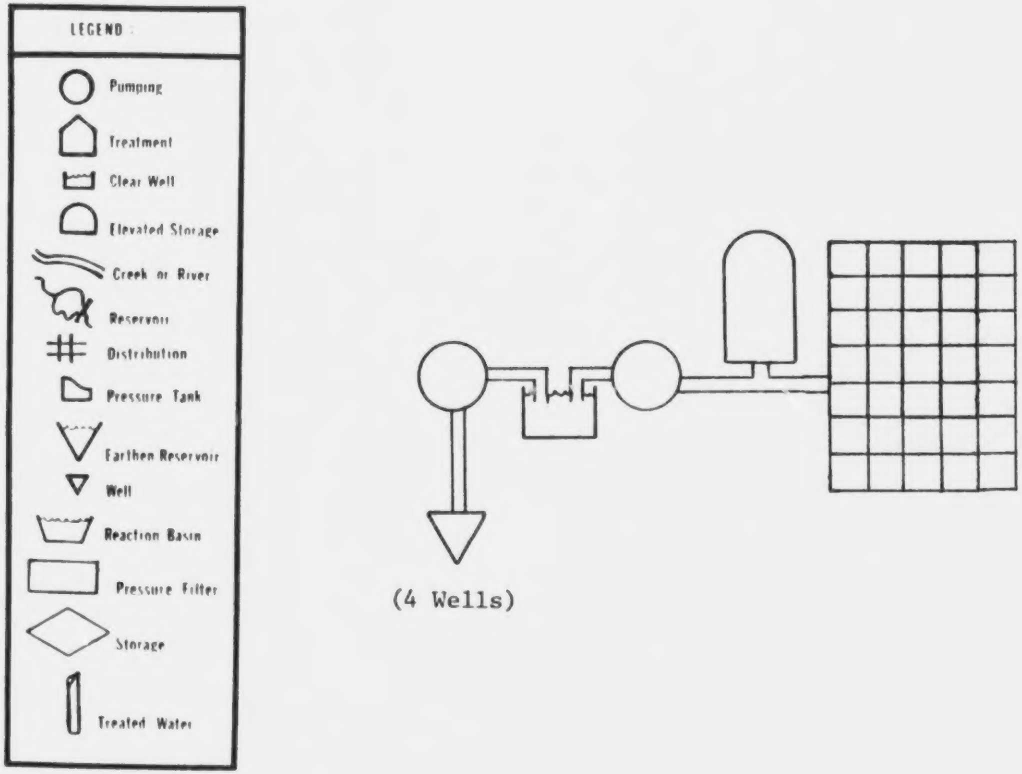

Figure 18. Simplified schematic presentation of Georgetown Water Utility system.

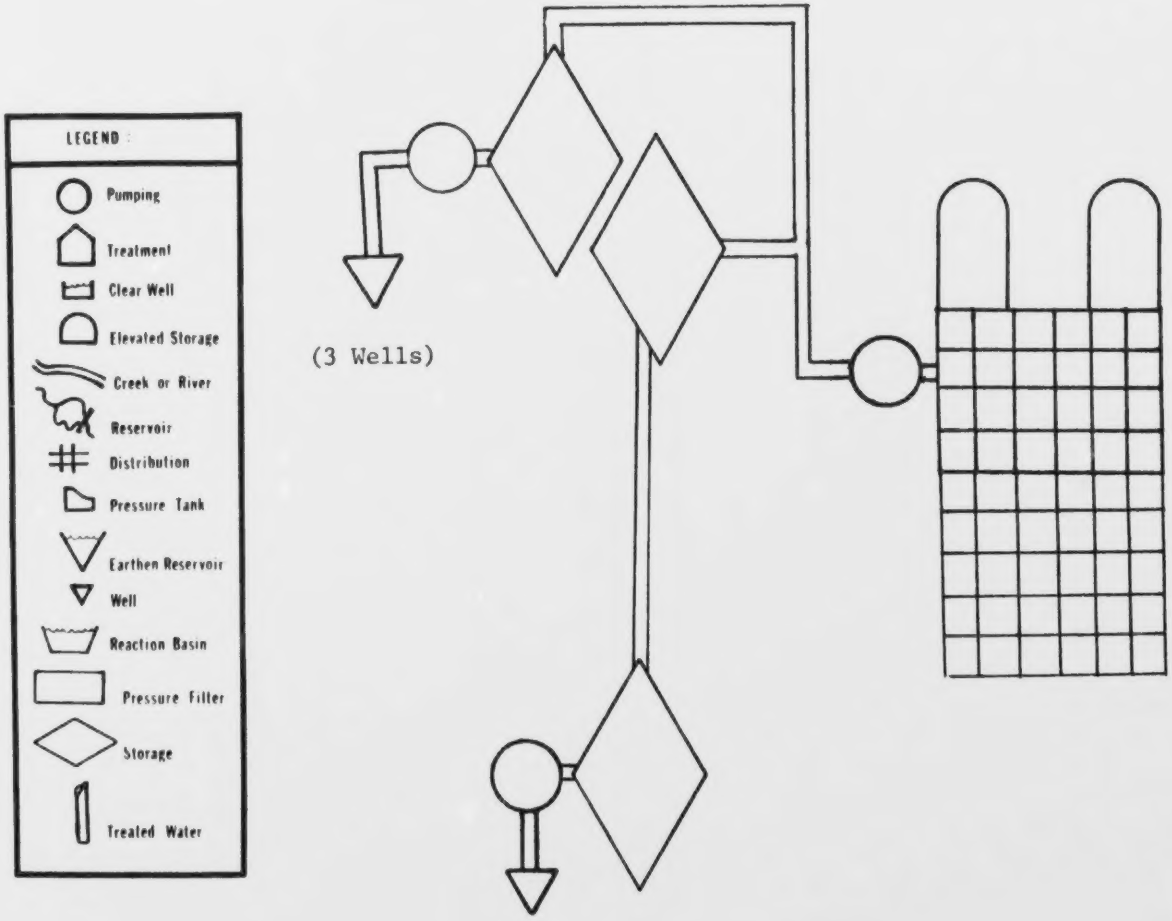

Figure 19. Simplified schematic presentation of Taylor Water Utility system.

BELL COUNTY WCID #1

Location and Operation

The Bell County Water Collection and Improvement District (WCID) #1 operates in Bell County, Texas with its headquarters in the City of Killeen. The water system provides water to a total of 42 customers, including seven major water systems (six municipal systems plus Fort Hood). Water is wholesaled to the municipal systems and provided to Fort Hood at no cost. Although water is furnished to Fort Hood at no cost, this water is considered as RPW because the arrangement is part of the lease agreement. The remaining connections are primarily minor connections, such as farms crossed by the distribution pipeline. Essentially, the water district does not include a distribution system, but furnishes water to consumers through their own distribution systems. During the period 1966 through 1975, the RPW of the utility increased 79 percent from 3,120 mil gal in 1966 to 5,579 mil gal in 1975. In 1975, the average cost for RPW was $139/mil gal. Of this amount, 73 percent was O&M expense and the remainder was depreciation and interest.

The System

A large portion of the original system was built by the U. S. Army to provide water to Fort Hood. The Army now leases the system to Bell County WCID #1 which operates, maintains, and improves the equipment and facilities. In return, the Army is paid for the lease and also receives water for Fort Hood at no cost.

The district purchases from the Brazos River Authority all raw water except that supplied to the Fort Hood Army Base. Water for Fort Hood is received at no cost.

Water is drawn from an impoundment on the Brazos River and lifted approximately 135 feet to the treatment plant located on a bluff near the impoundment. All water undergoes the following treatment processes: 1) sedimentation, 2) coagulation, 3) filtration, 4) chlorination, and 5) fluoridation. Following this treatment, the water flows into a clear well and is pumped into the transmission main. The City of Killeen and Fort Hood are located at the end of the 17-mile transmission line. There are three storage tanks in the WCID #1 system. A 4.0-mil-gal storage tank located near the treatment facility is connected to the Belton Water Utility through a 4-mile pipeline owned by WCID #1. Two elevated storage tanks with a capacity of 5.0 mil gal each are located near Killeen at the end of the transmission system.

Two booster stations, one located about midway on the pipeline and the other near the City of Killeen, move the water through the transmission line. Figure 20 is a simplified schematic presentation of the Bell County WCID #1 water system. The processed data are in Appendix C.

The costs associated with this water system are somewhat different

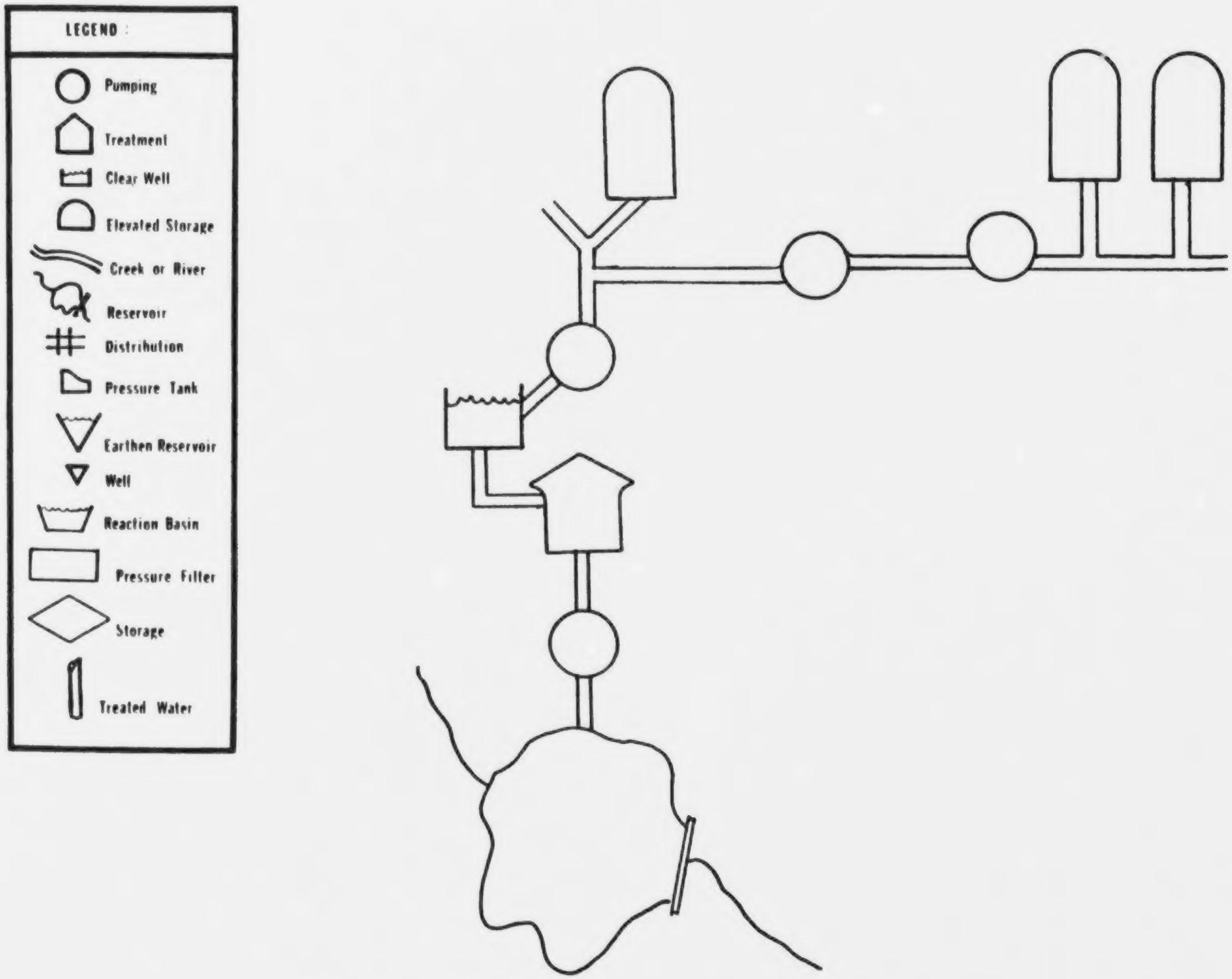

Figure 20. Simplified schematic presentation of Bell County WCID #1 water system.

from the lease rather than as depreciated capital. The cost of the lease is included as a part of O&M cost. Depreciation is for the improvement and expansion of the facilities implemented by the Bell County WCID. Financial records were maintained to the depth required for identifying support services, acquisition, treatment, and distribution costs for the latest five years only. The O&M costs prior to 1971 are shown as totals. The utility did not maintain records of kwh utilization.

KILLEEN WATER UTILITY

Location and Operation

The Killeen Water Utility is owned and operated by the City of Killeen, Texas, located 20 miles west of Temple. The system serves a population of approximately 40,350 in a 2.8-square mile service area. During the period 1967 through 1975, the RPW for the utility increased 66 percent from 966 mil gal in 1967 to 1,601 mil gal in 1975. In 1975, the average cost for RPW was $568/mil gal. Of this amount, 75 percent was O&M expense and the remainder was depreciation and interest.

The System

The Killeen utility acquires all of its water from Bell County WCID #1. Treated water is supplied into the Killeen system through three connections to the WCID #1 transmission lines. Each of the connection points provides water to ground storage reservoirs with capacities of 0.25, 2.0, and 11.0 mil gal, respectively. A separate pumping station moves water from each of the reservoirs into the lower distribution plane and into a storage reservoir with a capacity of 0.4 mil gal. From this reservoir, another pumping station moves the water to a higher distribution plane. There are four elevated storage tanks in the distribution system. Three of these tanks located in the lower distribution plane have a capacity of 1.0, 0.5, and 0.25 mil gal, respectively. The fourth storage tank is located in the higher distribution plane and has a capacity of 0.5 mil gal. Figure 21 is a simplified schematic diagram of the Killeen water system. The processed data are in Appendix C.

Financial records reflecting the operational cost of the system were available for only nine of the 10 years studied. Because adequate records were not available, no cost information is given for the year 1966. Records of kwh usage were not maintained by the utility.

DENTON WATER UTILITY

Location and Operation

The Denton Water Utility is owned and operated by the City of Denton, Texas, located 15 miles northeast of Dallas. The system serves a population of about 46,800 in a 32.3-square mile service area. During the

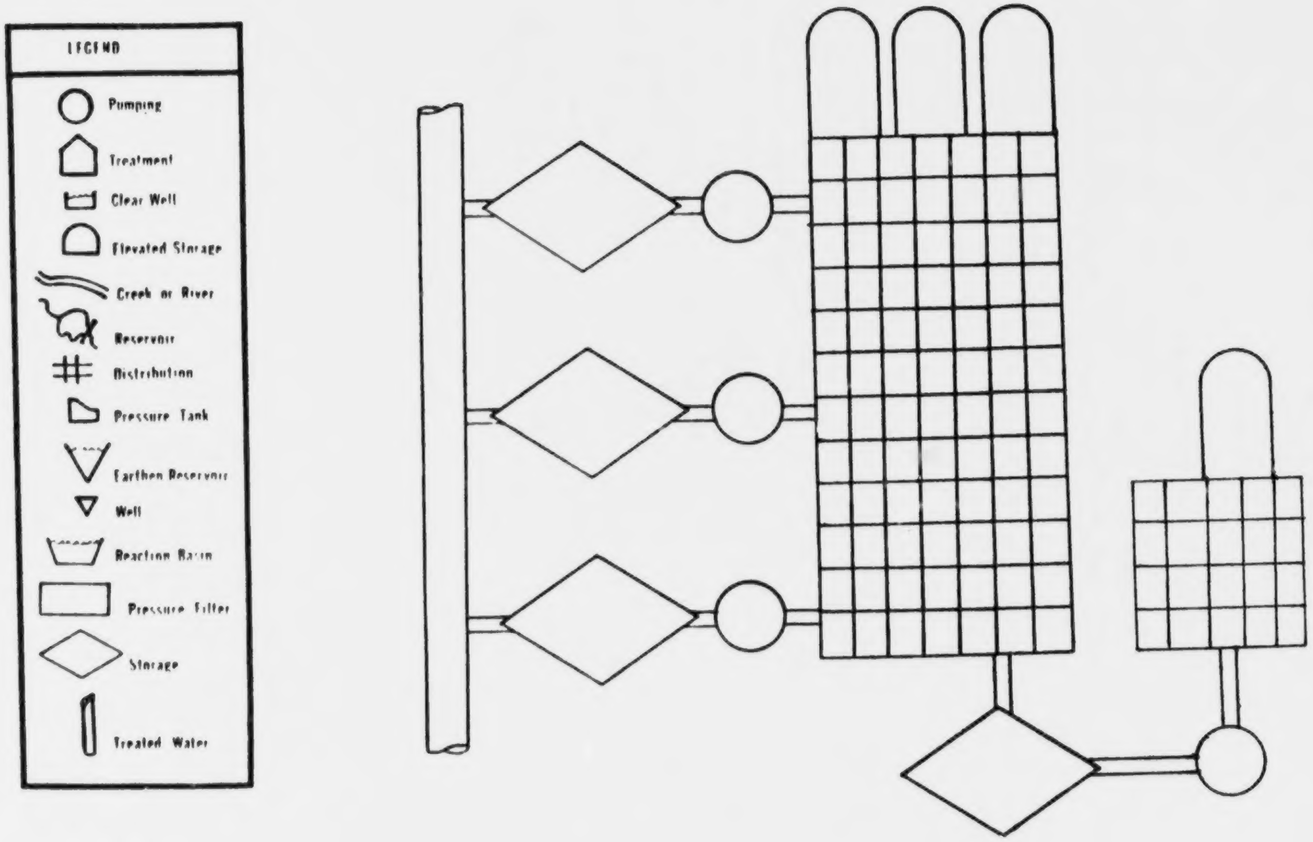

Figure 21. Simplified schematic presentation of Killeen Water Utility System.

period 1966 through 1975, the RPW for the utility increased 57 percent from 1,477 mil gal in 1966 to 2,318 mil gal in 1975. In 1975, the average cost for RPW was $475 /mil gal. Of this amount, 55 percent was O&M expense and the remainder was depreciation and interest.

The System

The utility acquires approximately 98 percent of its raw water from a surface source and about 2 percent from a ground source. The surface source is the Garza-Little Elm Reservoir where the utility has rights to store 21,000 acre feet of water and to divert 11,000 acre feet annually. The reservoir is located approximately 12 miles southeast of the City. In addition, the Denton utility has a contractual arrangement with the City of Dallas to withdraw annually from the same reservoir a specified amount of Dallas' raw water. On an annual basis, this equals an average of 13 MGD. This contract will expire in 1980. The utility also maintains seven wells in usable condition.

Denton's raw water intake structure is located on the Hickory Creek arm of the Garza-Little Elm Reservoir. The water flows by gravity from the reservoir down Hickory Creek and is removed at the intake which has a capacity of 60 MGD. The treatment plant is located near the intake in the southeastern area of the town. All water is subjected to the following treatment processes: 1) sedimentation, 2) filtration, 3) chlorination, and 4) fluoridation. Approximately 20 percent of the water is subjected to an activated carbon process. High service pumps move the water out of the treatment plant into the distribution system. Distribution system storage tanks with capacities of 0.36, 1.0, and 2.0 mil gal, respectively are maintained at three locations within the service area. Two elevated storage tanks are located in the distribution system and booster pumping stations are located throughout the City. Figure 22 is a simplified schematic presentation of the Denton water system and the processed data are in Appendix C.

The Denton Water Utility delivers raw water to the power plant at the same rate charged for treated water; therefore, the RPW shown includes some water that was not treated. Because of this, the ratio of RPW to treated water is unusually high; in fact, RPW exceeded treated water for the year 1974.

Information relating to the usage of kwh was not available. For other than the latest year, the O&M information available did not allow accurate allocation to the functions of acquisition, treatment, distribution, and support services; therefore, only total cost is shown in the processed data.

COLONY MUD #1

Location and Operation

The Colony Municipal Utility District (MUD) #1 is owned by the citizens residing in the district, a political subdivision of the State of Texas.

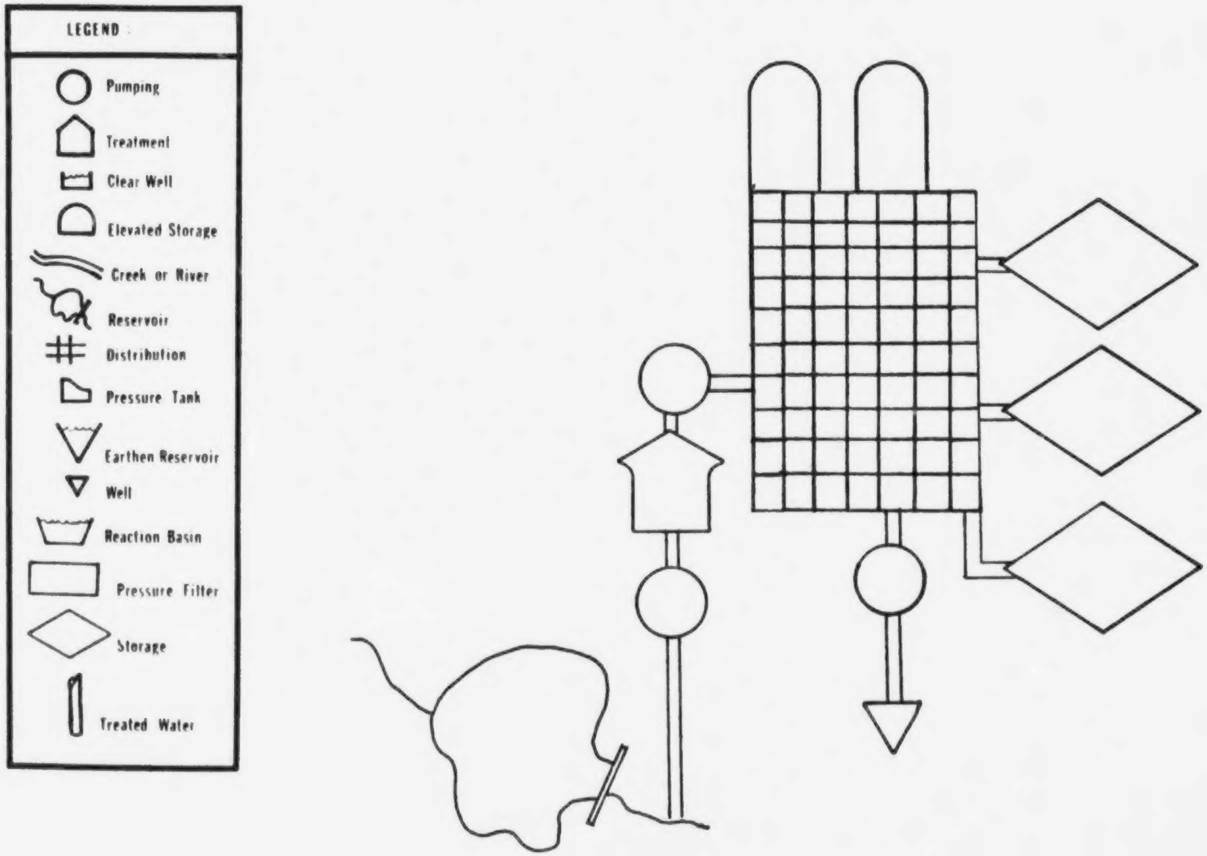

Figure 22. Simplified schematic presentation of Denton Water Utility system.

Colony is a private development of Fox and Jacobs, Inc. designed primarily for residential homes and small commercial establishments. The organization started selling houses in the district in June 1974, and the water district was established to serve the area. The Colony is located 26 miles north of Dallas and a portion of its land fronts on the Garza-Little Elm Reservoir. The water system served a population of approximately 1,550 in a 0.44-square mile service area in 1975. The Colony MUD system has been in existence for only one year. During that year the RPW amounted to 43 mil gal. It is expected that the population will expand rapidly. Projections call for more than doubling the population in 1976. In 1975, the average cost of RPW was $4,821/mil gal. Of this amount, 20 percent was O&M expense and the remainder was depreciation and interest. The high depreciation and interest are attributed to construction of the entire system with present day dollars and the fact that the system is built to support a considerably larger population than is presently served.

The System

The Colony MUD #1 system acquires its raw water from two wells: 1) Trinity Sands well is approximately 2,400 feet deep with a maximum capacity of 750 gal/minute, and 2) Paluxy well is 1,350 feet deep with a maximum capacity of 200 gal/minute. The distribution system contains a 400,000-gal ground storage tank and a 500,000-gal elevated storage reservoir. The distribution system consists of 6-inch and 18-inch pipelines and is designed to support further expansion and provide adequate pressure throughout the system. Figure 23 is a simplified schematic presentation of the Colony MUD #1 water system. The processed data are in Appendix C.

Data shown are for the one year of operation. The fiscal year of the organization made it necessary to obtain the operating expenses by utilizing the last half of one fiscal year and the first half of the next year in order to document a complete year of operation.

DALLAS COUNTY WCID #6

Location and Operation

The Dallas County Water Collection and Improvement District (WCID) #6 is owned by the citizens residing in the district, a political subdivision of the State of Texas located primarily in the unincorporated areas of Dallas County outside the City of Dallas. The system serves a population of approximately 13,800 in a 7.0-square mile service area. During the period 1966 through 1975, the RPW for the utility increased 112 percent from 159 mil gal in 1966 to 337 mil gal in 1975. In 1975, the average cost for RPW was $948/mil gal. Of this amount, 65 percent was O&M expense and the remainder was depreciation and interest.

The System

Originally, Dallas County WCID #6 acquired its source water from wells.

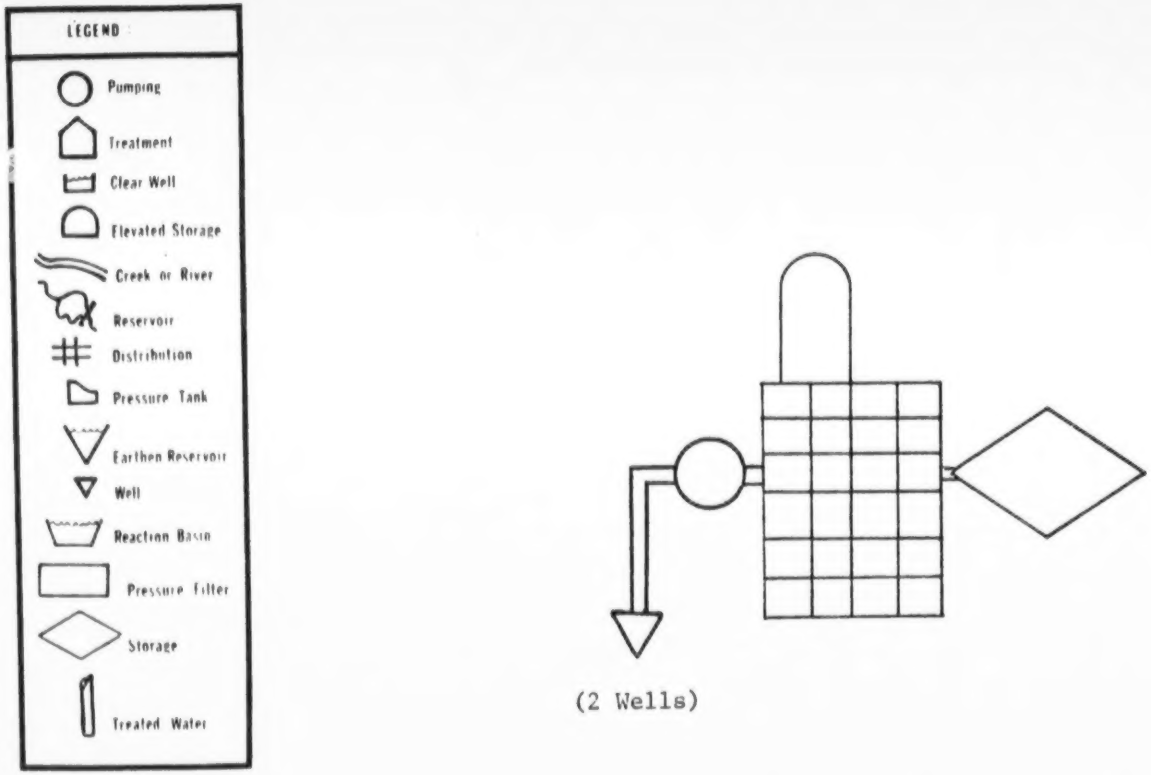

Figure 23. Simplified schematic presentation of Colony Municipal Utility District #1 system.

Approximately three years ago, the phase-out of ground source operations was completed and at the present time all water is purchased as treated water from the Dallas Water Utility.

Water is passed from the Dallas utility to WCID #6 through a metered connection and is stored in a 2.0-mil gal ground storage tank. The water is then pumped from the ground storage tank into a 750,000-gal elevated tank where it flows into the distribution system.

Figure 24 is a simplified schematic presentation of the Dallas County WCID #6 water system. The processed data are in Appendix C.

The amount of treated water (purchased water) was available for the latest year only.

COCKRELL HILL WATER UTILITY

Location and Operation

The Cockrell Hill Water Utility is owned and operated by the City of Cockrell Hill, Texas, an island city located within the city limits of Dallas. The water system serves a population of approximately 3,500 in a 1.0-square mile service area. During the period 1969 through 1975, the RPW for the utility decreased 17 percent from 123 mil gal in 1969 to 102 mil gal in 1975. In 1975, the average cost for RPW was $791/mil gal. Of this amount, 90 percent was O&M expense and the remainder was depreciation and interest. The high O&M ratio is attributed to the fact that this system is primarily a distribution system which purchases treated water under pressure from another utility as discussed in the following subsection.

The System

The Cockrell Hill Water Utility's source is treated water from the Dallas Water Utility. Treated water is received into the Cockrell Hill system from four 6-inch connection mains. The water is received under pressure and distributed directly to the consumer; therefore, the system requires no pumping, treatment, or storage within its boundaries. The City of Dallas maintains two elevated storage tanks near the city limits to feed water into the Cockrell Hill distribution system.

Figure 25 is a simplified schematic presentation of the Cockrell Hill water system. The processed data are in Appendix C.

The processed data include information for only the years 1969 through 1975. Adequate financial and operational records were not available for prior years.

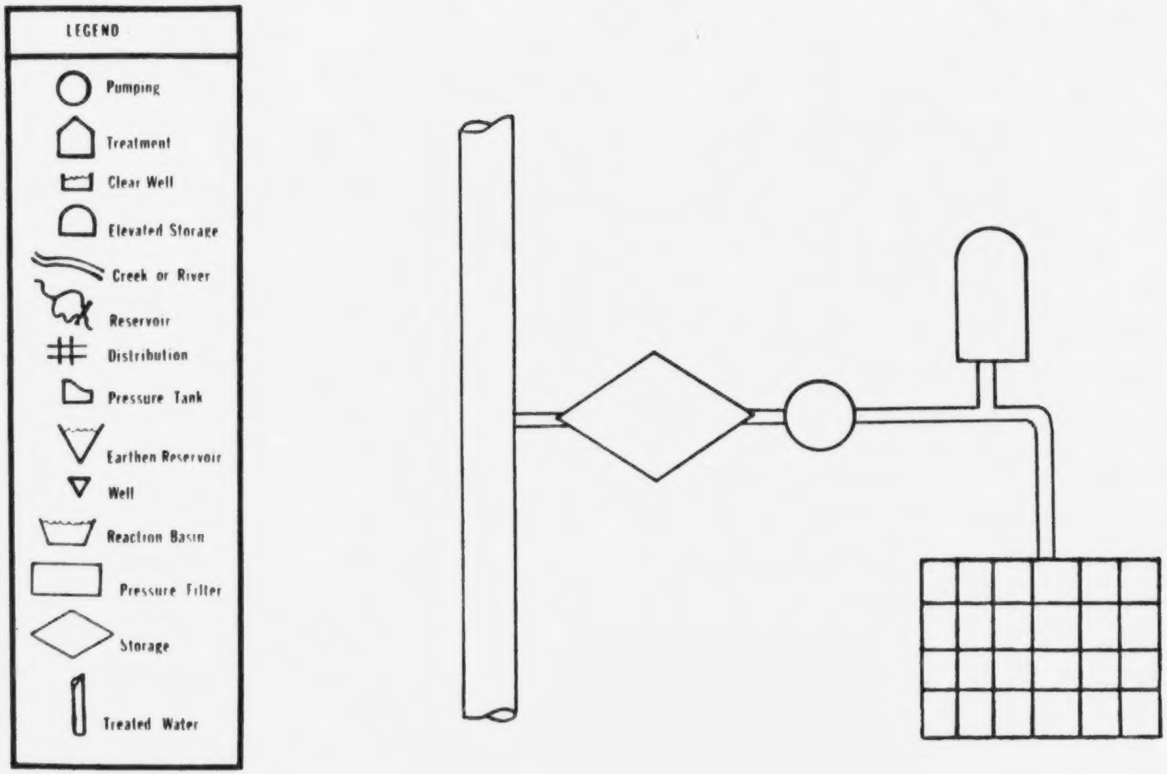

Figure 24. Simplified schematic presentation of Dallas County Water Collection and Improvement District #6 water system.

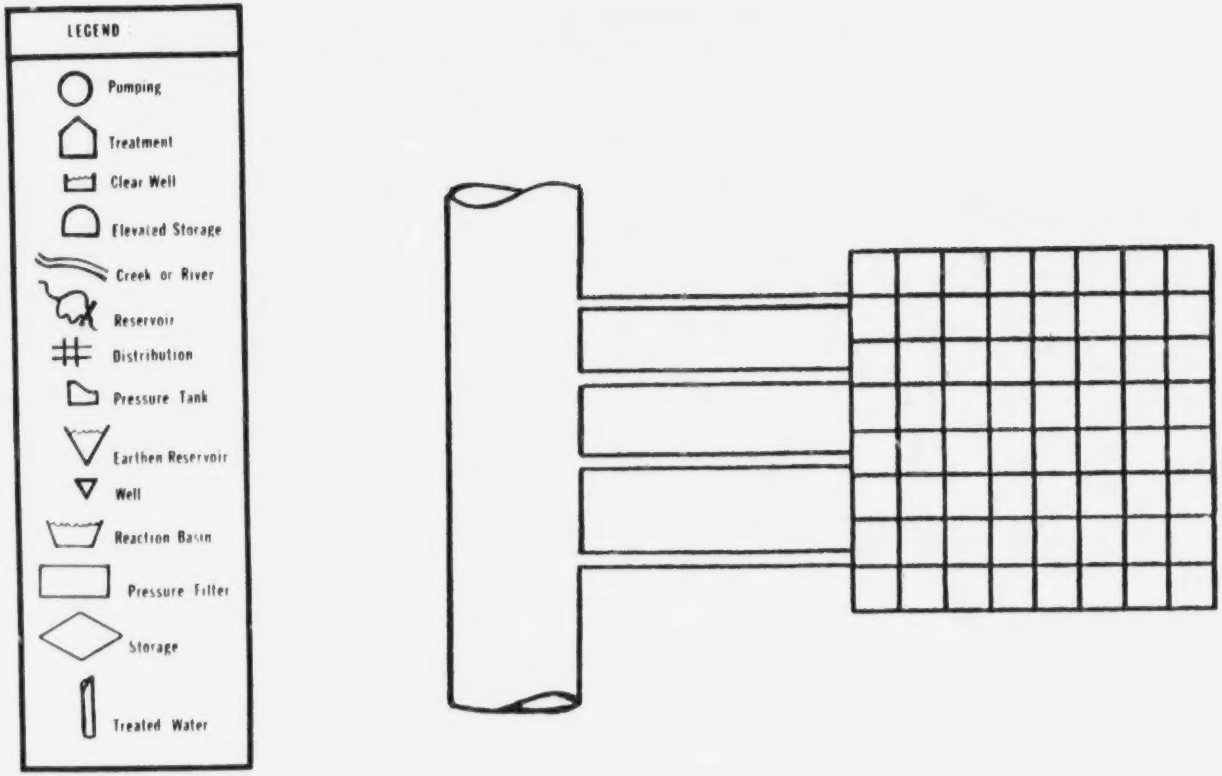

Figure 25. Simplified schematic presentation of Cockrell Hill water Utility system.

REFERENCES

1. Quarles, John R., "Impact of the Safe Drinking Water Act," Journal of the American Water Works Association, Vol. 68, No. 2, February 1976, pp. 69-70.

2. Clark, Robert M., Gillean, James I., and Adams, W. Kyle, "The Cost of Water Supply and Water Utility Management: Volume 1, "Municipal Environmental Research Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, Ohio, 45268, EPA-600/5-77-015a, November 1977.

APPENDIX A

This Appendix contains small water utilities printouts for Region III water systems. The first system printout is the complete 18-page format. The printouts that follow are the cover and data pages only for each system. If explananation of a data element is required, refer to the first printout.

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                          U. S. ENVIRONMENTAL PROTECTION AGENCY

                               WATER SUPPLY COST STUDY

                              EPA CONTRACT  68-03-2071

                                         FOR

                               BOROUGH OF DOWNINGTOWN

                                       3-3-002

                                       4/ 6/76



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     WEST LANCASTER AVE                                            6TH & WALNUT STREETS
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                                                                   (215)597-7736
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                                                                                         3-3-002
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                                  BOROUGH OF DOWNINGTOWN
                                       SYSTEM FACTS


THE SYSTEM FACTS REPORT IDENTIFIES THE PARAMETERS OF THE WATER UTILITY UNDER

STUDY.  THE REPORT INCLUDES THE POPULATION, SIZE OF THE SERVICE AREA, NUMBER

OF CUSTOMERS, SOURCE WATER INFORMATION, PERTINENT TOPOGRAPHICAL DATA, AND

FLOW INFORMATION FOR THE YEAR DESIGNATED IN THE HEADING.  INFORMATION IN

THIS REPORT IS ON A FISCAL YEAR BASIS.  FISCAL YEAR 1974-75 FOR EXAMPLE IS

DESIGNATED 1975 THROUGHOUT THE PRINTOUT.  THE IMPLEMENTATION DATE IS THE

DATE THAT DATA WAS COLLECTED AT THE UTILITY.

                     ALL UNITS IN THIS REPORT ARE IN ENGLISH

                 THE FOLLOWING TABLE CONVERTS THE UNITS TO METRIC

POUNDS PER MILLION GALLONS TO MILLIGRAMS PER LITER OR
  PARTS PER MILLION ...................................... MULTIPLY BY 0.12

MILLION GALLONS TO THOUSAND CUBIC METERS ................. MULTIPLY BY 3.79

$, MH, OR KWH/MILLION GALLONS TO $, MH, OR
  KWH/THOUSAND CUBIC METERS .............................. MULTIPLY BY 0.26

FEET TO METERS ........................................... MULTIPLY BY 0.30

MILES TO KILOMETERS ...................................... MULTIPLY BY 1.61

SQUARE MILES TO SQUARE KILOMETERS ........................ MULTIPLY BY 2.59


NOTE:  BECAUSE OF COMPUTER DESIGN, ACTUAL VALUES AND PRINTED NUMBERS MAY
       VARY SLIGHTLY
       -- INDICATES THAT THE DATA WAS NOT AVAILABLE




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                                                                                       3-3-002
                                                                                       4/ 6/76
                                 BOROUGH OF DOWNINGTOWN
                                      SYSTEM FACTS
                                          1976
POPULATION - SMSA                                           NONE
             COUNTY                                       315239
             CITY OR TOWN                                   8100
             RETAIL SERVICE AREA                            8268.
AREA OF RETAIL SERVICE AREA                                    3.00 SQ MI
NUMBER OF METERS                                            1872.
NUMBER OF ACCOUNTS                                          1872.
NUMBER OF FLAT RATE ACCOUNTS                                   0.
PURCHASED WATER - RAW                                          0 MG
                  TREATED                                   0.36 MG
SOURCE WATER - GROUND                                        0.0 %
               SURFACE                                     100.0 %
PIPE IN SYSTEM                                                20 MI
ELEVATIONS - INTAKES                                         250 FT
             TREATMENT PLANTS                                345 FT
             SERVICE AREA MIN.                               244 FT
             SERVICE AREA MAX.                               500 FT
REVENUE PRODUCING WATER                                 315.5770 MG
TREATED WATER                                           390.5800 MG
MAX. DAY                                                    1.40 MG
MAX. HOUR                                                   1.51 MG
FISCAL YEAR                                                12/31
IMPLEMENTATION DATE                                      4/ 6/76
PROCESSING DATE                                          5/27/76

                                                                                       PAGE  2
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BOROUGH OF DOWNINGTOWN

10-YEAR KEY OPERATING AND MAINTENANCE COST ANALYSIS

THE KEY OPERATING AND MAINTENANCE COST ANALYSIS INCLUDES ALL COST IDENTIFIED IN UTILITY RECORDS PRESENTED IN THE THREE FOLOWING FORMATS.

COST/YEAR - O&M COST PER YEAR IN DOLLARS

COST/MG - O&M COST/YEAR DIVIDED BY BILLED CONSUMPTION

% OF TOTAL - O&M COST/YEAR AS A % OF TOTAL

THE THREE FORMATS ARE DIVIDED INTO FOUR CATEGORIES:

SUPPORT SERVICES - ALL COST WHICH CAN NOT BE DIRECTLY ALLOCATED TO ACQUSITION, TREATMENT AND DISTRIBUTION SUCH AS ADMINISTRATIVE, ACCOUNTING & COLLECTION, ETC.

AQUSITION - ALL COSTS ASSOCIATED WITH AQUIRING WATER AND TRANSMITTING IT TO THE TREATMENT FACILITY

TREATMENT - ALL COSTS ASSOCIATED WITH PURIFICATION

DISTRIBUTION - ALL COST ASSOCIATED WITH DISTRIBUTION STORAGE, TRANSMISSION AND DISTRIBUTION OF WATER FROM THE TREATMENT FACILITY TO THE CUSTOMER

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                                                                                                        3-3-002
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                                          BOROUGH OF DOWNINGTOWN
                                     10-YEAR KEY  O & M COST ANALYSIS

****************************************************************************************************************
*                       1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
****************************************************************************************************************
                                                   COST/YEAR
                                                   ---------

SUPPORT SERVICES        9252.    17220.    19824.    21791.    27914.    39557.    47254.    58876.    85024.    51875.
ACQUISITION             8359.     7729.     9020.     8865.     8964.    10177.    12677.    16805.    19375.    13989.
TREATMENT              16031.    19735.    23299.    29155.    34137.    38146.    48256.    49909.    54447.    52854.
DISTRIBUTION           17710.    20836.    17181.    21303.    26048.    29142.    24395.    31154.    43299.    52841.
  TOTAL                51351.    65520.    69324.    81113.    97062.   117021.   132581.   156745.   202145.   171560.

                                                   COST/MG
                                                   -------

SUPPORT SERVICES          23.       37.       41.       44.       55.       88.      126.      177.      254.      154.
ACQUISITION               21.       17.       19.       18.       18.       23.       34.       51.       58.       44.
TREATMENT                 40.       43.       49.       58.       67.       85.      129.      150.      153.      157.
DISTRIBUTION              44.       45.       36.       43.       51.       65.       65.       94.      129.      167.
  TOTAL                  128.      142.      145.      163.      191.      262.      355.      472.      604.      544.

                                                   % OF TOTAL
                                                   ----------

SUPPORT SERVICES        18.02     26.28     28.60     26.86     28.76     33.80     35.64     37.56     42.06     30.24
ACQUISITION             16.28     11.80     13.01     10.93      9.24      8.70      9.56     10.72      9.58      8.15
TREATMENT               31.22     30.12     33.51     35.94     35.17     32.50     36.40     31.94     26.93     30.31
DISTRIBUTION            34.49     31.80     24.78     26.26     26.84     24.90     18.40     19.88     21.42     30.30
  TOTAL                100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00

                                                                                                        PAGE  4
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BOROUGH OF DOWNINGTOWN
TREATMENT INFORMATION

THE WATER TREATMENT INFORMATION REPORT PROVIDES INFORMATION ON WATER TREATMENT PROCESSES THAT THE UTILITY IS CURRENTLY USING, ALONG WITH ASSOCIATED COST. THE TREATMENT INFORMATION IS DIVIDED INTO THREE PARTS. THE FIRST, TREATMENT PROCESSES, LISTS THE TYPES OF TREATMENT THAT ARE USED BY THE UTILITY; THE SECOND, TREATMENT CHEMICALS, IDENTIFIES THE CHEMICALS USED PER MILLION GALLONS OF TREATED WATER DURING THE LAST YEAR; THE THIRD, TEN-YEAR CHEMICAL COST ANALYSIS, PROVIDES THE TOTAL COST OF CHEMICALS USED DURING EACH YEAR FOR THE PAST TEN YEARS, THE AMOUNT OF WATER THAT WAS TREATED, THE BILLED CONSUMPTION, THE CHEMICAL COST IN DOLLARS PER MILLION GALLONS TREATED WATER, AND THE CHEMICAL COST IN DOLLARS PER MILLION GALLONS OF BILLED CONSUMPTION.

3-3-002
4/ 6/76

BOROUGH OF DOWNINGTOWN

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
SEDIMENTATION	100.%
COAGULATION	100.%
FILTRATION	100.%
CHLORINATION	100.%
ACTIVATED CARBON	2.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	35.8
CARBON	1.8
LIME	46.6
ALUM	157.5
COPPER SULFATE	0.0

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	3500.	3800.	4021.	6162.	4834.	4458.	4500.	4052.	6682.	7437.
TREATED WATER	444.	472.	497.	516.	520.	500.	485.	474.	445.	391.
BILLED MG	402.	461.	479.	498.	507.	447.	374.	332.	334.	316.
$/MG TREATED	8.	8.	8.	12.	9.	9.	9.	9.	15.	19.
$/MG BILLED	9.	8.	8.	12.	10.	10.	12.	12.	20.	23.

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                          BOROUGH OF DOWNINGTOWN

                     RAW/TREATED WATER QUALITY INFORMATION


THE RAW/TREATED WATER QUALITY REPORT PRESENTS WATER QUALITY INFORMATION PER-

TINENT TO THE SAFE DRINKING WATER ACT.  THE STANDARDS ARE LISTED BELOW.

INTERIM PRIMARY MCL'S (MG/L)          PROPOSED SECONDARY STANDARD (MG/L)
----------------------------          ----------------------------------

ARSENIC            0.05              COLOR                        15 UNITS
BARIUM             1.                ODOR                          3 T.O.N.
CADMIUM            0.010             CHLORIDE                    250.
CHROMIUM           0.05              COPPER                         0.2
LEAD               0.05              FOAMING AGENTS                 0.05
MERCURY            0.002             IRON                           0.3
NITRATE (N)       10.                MANGANESE                      0.05
SELENIUM           0.01              SULPHATE                     250.
SILVER             0.05              ZINC                           5.
FLOURIDE
  AVG. MAX. DAILY AIR TEMP.          PROPOSED RADIATION STANDARD
        TO 53.8    2.4               ---------------------------
        TO 58.3    2.2
        TO 63.8    2.0               RADIUM 226                    3 PCI/L
        TO 70.6    1.8               GROSS BETA                 1000 PCI/L
        TO 79.2    1.6               GROSS ALPHA                  15 PCI/L
        TO 90.5    1.4               RADIUM 228                    5 PCI/L
ENDRIN             0.0002            STRONTIUM 90                  8 PCI/L
LINDANE            0.004             IODINE 131                    2 PCI/L
METHOXYCHLOR       0.1               TRITIUM                   8 X 10E04/L
TOXAPHENE          0.005
2,4-D              0.1
2,4,5-TP           0.01
TURBIDITY          1 UNIT

DATA INCLUDED IN THE QUALITY REPORT IS IN ONE OF THREE FORMATS:
 1. THE RESULTS OF A SINGLE TEST ON RAW AND/OR TREATED WATER WITH THE DATE.
 2. THE RANGE OF RESULTS OF MORE THAN ONE TEST OVER THE PAST 12 MONTHS FOR
    RAW AND/OR TREATED WATER.  NO DATE IS GIVEN IN THIS CASE.
 3. THE RANGE OF RESULTS OF MORE THAN ONE TEST AT MORE THAN ONE WATER SOURCE
    OR SITE IN THE DISTRIBUTION SYSTEM.  THE TEST DATE IS PRINTED OUT.
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                                                                                            3-3-002
                                                                                            4/ 6/76
                               BOROUGH OF DOWNINGTOWN

                         RAW/TREATED WATER QUALITY INFORMATION

                      (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

**************************************************************************************
*     CONSTITUENT      *          RAW          04/06/76  *        TREATED        04/06/76  *
*                      *     MIN.       MAX.     TEST    *   MIN.       MAX.     TEST    *
**************************************************************************************

  TURBIDITY                                       05                                0
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BOROUGH OF DOWNINGTOWN

10-YEAR LABOR COST ANALYSIS

THE TEN-YEAR LABOR COST ANALYSIS INCLUDES THE FOLLOWING INFORMATION ON AN ANNUAL BASIS FOR THE PAST TEN YEARS:

PAYROLL $ - OEM LABOR COST
MAN HOURS - TOTAL MAN HOURS WORKED
MG BILLED CONSUMPTION - REVENUE PRODUCING WATER
$/MG - PAYROLL DIVIDED BY MG BILLED CONSUMPTION
MH/MG - MAN HOURS DIVIDED BY BILLED CONSUMPTION
$/MH - PAYROLL DIVIDED BY MAN HOURS

3-3-002

4/ 6/75

BOROUGH OF DOWNINGTOWN

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYRULL $	27009.	36261.	41035.	44870.	59726.	75832.	87823.	90613.	90885.	91698.
MAN HOURS	11000.	11000.	11000.	11000.	11000.	11000.	11000.	13000.	12081.	12884.
MG BILLED CONSUMPTION	402.	461.	479.	498.	507.	447.	374.	332.	334.	316.
$/MG	67.	79.	96.	90.	118.	170.	235.	273.	272.	291.
MH/MG	27.	24.	23.	22.	22.	25.	29.	39.	36.	41.
$/MH	2.46	3.30	3.73	4.08	5.43	6.89	7.98	6.97	7.52	7.12

BOROUGH OF DOWNINGTOWN
10-YEAR POWER COST ANALYSIS

THE TEN YEAR POWER COST ANALYSIS INCLUDES THE FOLLOWING INFORMATION ON AN ANNUAL BASIS FOR THE PAST TEN YEARS:

POWER $ - POWER COST
KWH - KILOWATT HOURS USED
$/MG - POWER COST DIVIDED BY MILLION GALLONS BILLED CONSUMPTION
KWH/MG - KILOWATT HOURS DIVIDED BY MILLION GALLONS BILLED CONSUMPTION

BOROUGH OF DOWNINGTOWN

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	11058.	11526.	12349.	14128.	13534.	16534.	19505.	18587.	24907.	24143.
K W H	7433.	7155.	9299.	8256.	7694.	7793.	8075.	8174.	7724.	5403.
$/MG	27.	25.	26.	28.	27.	37.	52.	55.	74.	77.
K W H/MG	18.	16.	19.	17.	15.	17.	22.	25.	23.	17.

BOROUGH OF DOWNINGTOWN

10-YEAR DEPRECIATION COST ALLOCATION

THE TEN YEAR DEPRECIATION COST ALLOCATION REPORT INCLUDES THE FOLLOWING COST FOR THE LAST TEN YEARS. THESE COST ARE ALLOCATED TO THE UTILITIES FUNCTIONS OF SUPPORT SERVICES, AQUSITION, TREATMENT AND DISTRIBUTION.

DEPRECIATION COST $ - ANNUAL DEPRECIATION COST IN DOLLARS

DEPRECIATION COST $/MG - DEPRECIATION COST DIVIDED BY MG BILLED CONSUMPTION

DEPRECIATION COST % OF TOTAL - DEPRECIATION COST OF A UTILITY FUNCTION AS A PERCENT OF TOTAL DEPRECIATION COST

INTEREST COST - INCLUDES INTEREST $ (TOTAL ANNUAL INTEREST COST IN DOLLARS) AND INTEREST COST $/MG (INTEREST COST DIVIDED BY MILLION GALLONS BILLED CONSUMPTION)

BOROUGH OF DOWNINGTOWN

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	1941.	2057.	2173.	2288.	2404.	2519.	2635.	2751.	2866.	2982.
ACQUISITION	971.	1028.	1086.	1144.	1202.	1260.	1317.	1375.	1433.	1491.
TREATMENT	971.	1028.	1086.	1144.	1202.	1260.	1317.	1375.	1433.	1491.
DISTRIBUTION	15531.	16456.	17381.	18306.	19230.	20155.	21080.	22005.	22930.	23854.
TOTAL	19414.	20570.	21726.	22882.	24038.	25194.	26350.	27506.	28662.	29819.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	5.	4.	5.	5.	5.	6.	7.	8.	9.	9.
ACQUISITION	2.	2.	2.	2.	2.	3.	4.	4.	4.	5.
TREATMENT	2.	2.	2.	2.	2.	3.	4.	4.	4.	5.
DISTRIBUTION	39.	36.	36.	37.	38.	45.	56.	66.	69.	75.
TOTAL	48.	45.	45.	46.	47.	55.	71.	83.	86.	94.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
ACQUISITION	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
TREATMENT	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DISTRIBUTION	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	13955.	10445.	9628.	9128.	8447.	7743.	7018.	6318.	5499.	4704.
INTEREST $/MG	35.	23.	20.	18.	17.	17.	19.	19.	16.	15.

BOROUGH OF DOWNINGTOWN

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

THE TEN-YEAR CAPITAL AND OPERATING COST ANALYSIS PROVIDES THE FOLLOWING ANNUAL COSTS FOR THE PAST TEN YEARS:

O&M - OPERATING AND MAINTENANCE COSTS

DEPRECIATION - ANNUAL DEPRECIATION COST (ORIGIONAL COST - STRAIGHT LINE METHOD)

INTEREST - ANNUAL INTEREST COST ON BOTH SHORT- AND LONG-TERM DEBT

TOTAL - SUM OF THE ABOVE COSTS

$/MG - TOTAL DIVIDED BY MG BILLED CONSUMPTION

$/MG 1975 DOLLARS - $/MG ADJUSTED TO 1975 VALUES USING THE CONSUMER PRICE INDEX

SPECIAL TAXES - REAL PROPERTY TAXES (NOT INCLUDED IN TOTAL)

O&M % OF TOTAL - OPERATING AND MAINTENANCE COST AS A PERCENT OF TOTAL

BOROUGH OF DOWNINGTOWN

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	51351.	65520.	69324.	81113.	97062.	117021.	132581.	156745.	202145.	171560.
DEPRECIATION	19414.	20570.	21726.	22882.	24038.	25194.	26350.	27506.	28662.	29818.
INTEREST	13955.	10465.	9628.	9128.	8447.	7743.	7018.	6318.	5499.	4704.
TOTAL	84720.	96534.	100678.	113124.	129547.	149958.	165949.	190569.	236306.	206082.
$/MG	211.	210.	210.	227.	256.	335.	444.	574.	707.	653.
$/MG 1975 DOLLARS	350.	337.	326.	334.	355.	446.	573.	694.	770.	653.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	60.61	67.87	68.86	71.70	74.92	78.04	79.89	82.25	85.54	83.25

BOROUGH OF DOWNINGTOWN
CURRENT YEAR COST SUMMARY

THE COST SUMMARY PROVIDES THE SUPPORT SERVICES, AQUSITION, TREATMENT, DISTRIBUTION, INTEREST, TOTAL, TAXES AND TOTAL WITH TAXES OF WATER ON A DOLLARS PER MILLION GALLONS BASIS. THE SUMMARY ALSO PROVIDES THESE COSTS ON A PERCENT OF SUB-TOTAL AND PERCENT OF TOTAL BASIS.

THE TAXES IDENTIFIED BELOW INCLUDE ONLY REAL PROPERTY TAXES WHICH ARE USUALLY FOUND IN PRIVATE UTILITIES. IF THESE TAXES DO NOT EXIST THE SUB-TOTAL AND TOTAL ARE EQUAL.

SYSTEM DESCRIPTION

THE TOWN PUMPS WATER FROM BEAVER CREEK AND HAS A SECOND GRAVITY INTAKE AT COPELAND. WATER IS TREATED AT A PLANT CONSTRUCTED IN 1926. WATER THEN FLOWS TO A 3.75 MG EARTHEN FINISHED WATER RESERVOIR. WATER IS THEN BOOSTED INTO THE DISTRIBUTION SYSTEM. THERE ARE TWO 2.0 MG TANKS IN THE SYSTEM.

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                                                                                              3-3-002
                                                                                              4/ 6/76
                                          BOROUGH OF DOWNINGTOWN
                                          COST SUMMARY FOR 1975
*****************************************************************************************************
*          *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*****************************************************************************************************

$/MG              174.           49.        172.          243.          15.      653.       0.       653.

% OF TOTAL        26.62          7.51       26.37         37.22         2.28     100.00

% OF TOTAL        26.62          7.51       26.37         37.22         2.28     100.00     0.00     100.00
   W/TAX



             IN SUMMARY:
                   DURING THE PAST 10 YEARS, $   1906232. TOTAL COST IN 1975 DOLLARS PRODUCED
                        4150. MG WATER FOR AN AVERAGE COST OF $    459./ MG (1975 DOLLARS)




                                                                                              PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

GREAT VALLEY WATER COMPANY

3-3-001

4/ 5/76

EPA PROJECT OFFICER

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US EPA
6TH & WALNUT STREETS
PHILADELPHIA, PA 19106
215-597-7736

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                                                                                 3-3-001
                                                                                 4/ 5/76
                              GREAT VALLEY WATER COMPANY
                                     SYSTEM FACTS
                                         1975
POPULATION - SMSA                                                  --
             COUNTY                                            280000
             CITY OR TOWN                                          --
             RETAIL SERVICE AREA                                16500.
AREA OF RETAIL SERVICE AREA                                       40.00 SQ MI
NUMBER OF METERS                                                 3315.
NUMBER OF ACCOUNTS                                               3315.
NUMBER OF FLAT RATE ACCOUNTS                                        0.
PURCHASED WATER - RAW                                                0 MG
                  TREATED                                            0 MG
SOURCE WATER - GROUND                                            100.0 %
               SURFACE                                             0.0 %
PIPE IN SYSTEM                                                      85 MI
ELEVATIONS - INTAKES                                               --
             TREATMENT PLANTS                                      --
             SERVICE AREA MIN.                                     200 FT
             SERVICE AREA MAX.                                     610 FT
REVENUE PRODUCING WATER                                           383.2700 MG
TREATED WATER                                                     435.4110 MG
MAX. DAY                                                           --
MAX. HOUR                                                          --
FISCAL YEAR                                                     12/31
IMPLEMENTATION DATE                                            4/ 5/76
PROCESSING DATE                                                5/27/76


                                                                                 PAGE  2
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                                                                                                        3-3-001
                                                                                                        4/ 5/76
                                         GREAT VALLEY WATER COMPANY
                                        10-YEAR KEY  O & M COST ANALYSIS

*********************************************************************************************************************
*                          1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
*********************************************************************************************************************
                                                 COST/YEAR
                                                 ---------

SUPPORT SERVICES          31540.    43499.    35215.    37675.    39303.    50511.    53566.    61444.    70546.    78787.
ACQUISITION               10254.     8135.    16477.    26794.    29833.    38723.    35733.    41839.    61123.    71926.
TREATMENT                  4863.     4716.     8256.     9267.     9924.    14648.    18618.    21801.    32853.    39665.
DISTRIBUTION               3274.     5453.     2921.     7513.     8307.    10131.    13870.    25454.    32902.    33536.
  TOTAL                   49931.    61803.    62869.    81250.    87367.   114013.   121787.   150538.   197424.   223914.

                                                 COST/MG
                                                 -------

SUPPORT SERVICES            544.      508.      254.      233.      231.      217.      199.      199.      186.      206.
ACQUISITION                 177.       95.      119.      165.      176.      166.      133.      135.      161.      188.
TREATMENT                    84.       55.       59.       57.       58.       63.       69.       70.       87.      103.
DISTRIBUTION                 56.       64.       21.       46.       49.       43.       52.       82.       87.       87.
  TOTAL                     862.      722.      453.      502.      514.      489.      453.      487.      521.      584.

                                                 % OF TOTAL
                                                 ----------

SUPPORT SERVICES          63.17     70.38     56.01     46.37     44.99     44.30     43.98     40.82     35.73     35.19
ACQUISITION               20.54     13.16     26.21     32.98     34.15     33.96     29.34     27.79     30.96     32.12
TREATMENT                  9.74      7.63     13.13     11.41     11.36     12.85     15.29     14.48     16.64     17.71
DISTRIBUTION               6.56      8.82      4.65      9.25      9.51      8.89     11.39     16.91     16.67     14.98
  TOTAL                  100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00


                                                                                                        PAGE  4
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                              GREAT VALLEY WATER COMPANY

                                TREATMENT INFORMATION

*****************************************************     *********************************************************************
*     TREATMENT PROCESSES    *  % WATER TREATED  *      *   TREATMENT CHEMICALS   *            LB/MG TREATED                  *
*****************************************************     *********************************************************************

      CHLORINATION                 100.%

      STABILIZATION                100.%


                              10-YEAR CHEMICAL COST ANALYSIS

**************************************************************************************************************************
*                              1966       1967       1968       1969       1970       1971       1972       1973       1974       1975*
**************************************************************************************************************************

      TOTAL COST                 --         --      4085.      4729.      6014.      8539.     10065.     12972.     22822.     29530.

      TREATED WATER             85.       112.       163.       193.       243.       276.       306.       358.       399.       435.

      BILLED MG                 58.        86.       139.       162.       170.       233.       269.       309.       379.       383.

      $/MG TREATED               --         --        25.        24.        25.        31.        33.        36.        57.        68.

      $/MG BILLED                --         --        29.        29.        35.        37.        37.        42.        60.        77.
```

GREAT VALLEY WATER COMPANY

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	10/20/74 TEST	TREATED MIN.	TREATED MAX.	10/20/74 TEST
NITRATE (N)	.02	5.0				
TURBIDITY	0.12	3.8				
COLOR	1.0	1.0				
CHLORIDE	12.0	29.0				
IRON	.01	2.0				
MANGANESE	<0.01	0.2				

3-3-001
4/ 5/76

GREAT VALLEY WATER COMPANY

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	37661.	43609.	45964.	55750.	62989.	86927.	92631.	108002.
MAN HOURS	--	--	8320.	10400.	10400.	10400.	14560.	14560.	16640.	16640.
MG BILLED CONSUMPTION	58.	86.	139.	162.	170.	233.	269.	309.	379.	383.
$/MG	--	--	271.	269.	271.	239.	234.	281.	245.	282.
MH/MG	--	--	60.	64.	61.	45.	54.	47.	44.	43.
$/MH	--	--	4.53	4.19	4.42	5.36	4.33	5.97	5.57	6.49

3-3-001
4/ 5/76

GREAT VALLEY WATER COMPANY
10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	5569.	6428.	9406.	11518.	14272.	18444.	22819.	26999.	40469.	45452.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	96.	75.	68.	71.	84.	79.	85.	87.	107.	113.
K W H/MG	--	--	--	--	--	--	--	--	--	--

GREAT VALLEY WATER COMPANY

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	1268.	1528.	2147.	2459.	3026.	3636.	4106.	4753.	5046.	6715.
ACQUISITION	2536.	3056.	4294.	4918.	6051.	7272.	8212.	9507.	10093.	13431.
TREATMENT	634.	764.	1073.	1229.	1513.	1818.	2053.	2377.	2523.	3358.
DISTRIBUTION	8241.	9932.	13954.	15982.	19667.	23633.	26689.	30897.	32802.	43650.
TOTAL	12679.	15281.	21468.	24588.	30257.	36359.	41060.	47534.	50464.	67154.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	22.	18.	15.	15.	18.	16.	15.	15.	13.	18.
ACQUISITION	44.	36.	31.	30.	36.	31.	31.	31.	27.	35.
TREATMENT	11.	9.	8.	8.	9.	8.	8.	8.	7.	9.
DISTRIBUTION	142.	116.	100.	99.	116.	101.	99.	100.	87.	114.
TOTAL	219.	179.	155.	152.	178.	156.	153.	154.	133.	175.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
ACQUISITION	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
TREATMENT	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DISTRIBUTION	65.00	65.00	65.00	65.00	65.00	65.00	65.00	65.00	65.00	65.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	0.	2776.	3698.	8186.	6196.	21150.	29068.	28359.	33882.	30905.
INTEREST $/MG	0.	32.	27.	51.	36.	91.	108.	92.	89.	81.

GREAT VALLEY WATER COMPANY

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	49931.	61803.	62869.	81250.	87367.	114013.	121787.	150538.	197424.	223914.
DEPRECIATION	12679.	15281.	21468.	24588.	30257.	36358.	41060.	47534.	50464.	67154.
INTEREST	0.	2776.	3698.	8186.	6196.	21150.	29068.	28359.	33882.	30905.
TOTAL	62610.	79859.	88036.	114023.	123820.	171522.	191915.	226431.	281771.	321973.
$/MG	1080.	933.	634.	704.	729.	736.	714.	732.	744.	843.
$/MG 1975 DOLLARS	1794.	1502.	983.	1035.	1013.	979.	921.	886.	811.	843.
SPECIAL TAXES	0.	0.	0.	0.	3613.	6242.	9447.	9479.	9868.	10148.
O & M % OF TOTAL	79.75	77.39	71.41	71.26	70.56	66.47	63.46	66.48	70.07	69.54

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                                                                                                   3-3-001
                                                                                                   4/ 5/76
                                   GREAT VALLEY WATER COMPANY
                                     COST SUMMARY FOR 1975
************************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
************************************************************************************************************

$/MG              223.          223.        112.          201.          81.       840.        26.        867.

% OF TOTAL       26.56         26.51       13.36         23.97         9.60     100.00

% OF TOTAL       25.74         25.70       12.95         23.24         9.31      96.94       3.06      100.00
    W/TAX



              IN SUMMARY:
                    DURING THE PAST 10 YEARS, $   2087463. TOTAL COST IN 1975 DOLLARS PRODUCED
                         2187. MG WATER FOR AN AVERAGE COST OF $    954./ MG (1975 DOLLARS)
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

HONEY BROOK BOROUGH

3-3-003

4/ 7/76

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                                                                        3-3-003
                                                                        4/ 7/76
                              HONEY BROOK BOROUGH
                                 SYSTEM FACTS
                                     1975
POPULATION - SMSA                                        --
             COUNTY                                      --
             CITY OR TOWN                              1200
             RETAIL SERVICE AREA                       1400.
AREA OF RETAIL SERVICE AREA                              0.75 SQ MI
NUMBER OF METERS                                         2.
NUMBER OF ACCOUNTS                                     322.
NUMBER OF FLAT RATE ACCOUNTS                           320.
PURCHASED WATER - RAW                                    0 MG
                  TREATED                                0 MG
SOURCE WATER - GROUND                                  100.0 %
               SURFACE                                   0.0 %
PIPE IN SYSTEM                                           9.2 MI
ELEVATIONS - INTAKES                                     --
             TREATMENT PLANTS                            --
             SERVICE AREA MIN.                           --
             SERVICE AREA MAX.                           --
REVENUE PRODUCING WATER                                  41.2600 MG
TREATED WATER                                            48.5410 MG
MAX. DAY                                                 .17 MG
MAX. HOUR                                                --
FISCAL YEAR                                            12/31
IMPLEMENTATION DATE                                   4/ 7/76
PROCESSING DATE                                       5/27/76

                                                                        PAGE  2
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HONEY BROOK BOROUGH

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
				COST/YEAR						
SUPPORT SERVICES	--	--	--	769.	758.	1163.	1237.	1197.	1246.	1403.
ACQUISITION	--	--	--	1899.	2063.	2505.	2788.	3275.	3764.	4001.
TREATMENT	--	--	--	1040.	1148.	963.	945.	1217.	1199.	1365.
DISTRIBUTION	--	--	--	3149.	2403.	2327.	2366.	1497.	3881.	985.
TOTAL	--	--	--	6857.	6372.	6958.	7336.	7185.	10090.	7756.
				COST/MG						
SUPPORT SERVICES	--	--	--	29.	27.	35.	32.	28.	28.	34.
ACQUISITION	--	--	--	73.	72.	75.	73.	77.	86.	97.
TREATMENT	--	--	--	40.	40.	29.	25.	29.	27.	33.
DISTRIBUTION	--	--	--	121.	84.	70.	62.	35.	88.	24.
TOTAL	--	--	--	263.	223.	208.	192.	170.	229.	183.
				% OF TOTAL						
SUPPORT SERVICES	--	--	--	11.21	11.90	16.72	16.87	16.65	12.35	18.09
ACQUISITION	--	--	--	27.69	32.37	36.00	38.00	45.58	37.30	51.59
TREATMENT	--	--	--	15.17	18.01	13.84	12.88	16.93	11.89	17.50
DISTRIBUTION	--	--	--	45.93	37.72	33.44	32.25	20.83	38.47	12.72
TOTAL	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3-3-003

4/ 7/76

HONEY BROOK BOROUGH

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	1.4

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	91.	229.	303.	320.	549.	320.	645.
TREATED WATER	--	--	--	31.	34.	39.	45.	50.	52.	49.
BILLED MG	--	--	--	26.	29.	33.	38.	42.	44.	41.
$/MG TREATED	--	--	--	3.	7.	8.	7.	11.	6.	13.
$/MG BILLED	--	--	--	4.	8.	9.	8.	13.	7.	16.

```
                                                                                              3-3-003
                                                                                              4/ 7/76
                                        HONEY BROOK BOROUGH

                               RAW/TREATED WATER QUALITY INFORMATION

                              (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

**************************************************************************************************
*      CONSTITUENT        *              RAW          03/08/76  *         TREATED          03/08/76   *
*                         *      MIN.        MAX.       TEST    *    MIN.        MAX.        TEST     *
**************************************************************************************************

  NITRATE (N)                                          4.65

  IRON                                                <0.05




                                                                                              PAGE  8
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3-3-003
4/ 7/75

HONEY BROOK BOROUGH

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	1606.	1567.	1692.	1716.	1718.	1945.	1922.
MAN HOURS	--	--	--	416.	416.	416.	416.	416.	416.	416.
MG BILLED CONSUMPTION	--	--	--	26.	29.	33.	38.	42.	44.	41.
$/MG	--	--	--	62.	55.	51.	45.	41.	44.	47.
MH/MG	--	--	--	16.	15.	12.	11.	10.	9.	13.
$/MH	--	--	--	3.86	3.77	4.07	4.13	4.13	4.68	4.52

HONEY BROOK BOROUGH

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	--	--	1829.	1965.	2435.	2739.	3219.	3661.	3951.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	--	--	--	70.	69.	73.	72.	76.	83.	95.
K W H/MG	--	--	--	--	--	--	--	--	--	--

```
                                          MONEY BROOK BOROUGH

                                    10-YEAR DEPRECIATION ALLOCATION

*********************************************************************************************************
*                           1966     1967     1968     1969     1970     1971     1972     1973     1974     1975   *
*********************************************************************************************************
                                           DEPRECIATION COST $
                                           -------------------

SUPPORT SERVICES             --       --       --       0.       0.       0.       0.       0.       0.       0.
ACQUISITION                  --       --       --     920.     886.     872.     844.     813.     677.     775.
TREATMENT                    --       --       --     230.     221.     218.     211.     203.     169.     194.
DISTRIBUTION                 --       --       --    3450.    3322.    3271.    3164.    3051.    2538.    2907.
  TOTAL                      --       --       --    4600.    4430.    4361.    4218.    4067.    3384.    3875.
                                         DEPRECIATION COST $/MG
                                         ----------------------

SUPPORT SERVICES             --       --       --       0.       0.       0.       0.       0.       0.       0.
ACQUISITION                  --       --       --      35.      31.      26.      22.      19.      15.      19.
TREATMENT                    --       --       --       9.       8.       7.       6.       5.       4.       5.
DISTRIBUTION                 --       --       --     132.     116.      95.      83.      72.      58.      70.
  TOTAL                      --       --       --     176.     155.     131.     110.      96.      77.      94.
                                      DEPRECIATION COST % OF TOTAL
                                      ----------------------------

SUPPORT SERVICES             --       --       --     0.00     0.00     0.00     0.00     0.00     0.00     0.00
ACQUISITION                  --       --       --    20.00    20.00    20.00    20.00    20.00    20.00    20.00
TREATMENT                    --       --       --     5.00     5.00     5.00     5.00     5.00     5.00     5.00
DISTRIBUTION                 --       --       --    75.00    75.00    75.00    75.00    75.00    75.00    75.00
  TOTAL                      --       --       --   100.00   100.00   100.00   100.00   100.00   100.00   100.00
                                            INTEREST COST $
                                            ---------------

INTEREST $                   --       --       --    6514.    6275.    6026.    5768.    5499.    5219.    4927.
INTEREST $/MG                --       --       --     250.     219.     180.     151.     130.     119.     119.
```

HONEY BROOK BOROUGH

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	6857.	6372.	6958.	7336.	7185.	10090.	7756.
DEPRECIATION	--	--	--	4600.	4430.	4361.	4218.	4067.	3384.	3876.
INTEREST	--	--	--	6514.	6275.	6026.	5768.	5499.	5219.	4927.
TOTAL	--	--	--	17971.	17077.	17346.	17322.	16751.	18693.	16559.
$/MG	--	--	--	689.	597.	519.	453.	396.	425.	401.
$/MG 1975 DOLLARS	--	--	--	1013.	830.	691.	584.	479.	463.	401.
SPECIAL TAXES	--	--	--	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	38.16	37.31	40.11	42.35	42.89	53.98	46.84

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                                                                                                  3-3-003
                                                                                                  4/ 7/76
                                             HONEY BROOK BOROUGH

                                            COST SUMMARY FOR 1975

*************************************************************************************************************
*         *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*************************************************************************************************************

$/MG                  34.          116.         38.          94.          119.        401.       0.        401.

% OF TOTAL            8.47         28.84        9.42         23.51        29.76       100.00

% OF TOTAL            8.47         28.84        9.42         23.51        29.76       100.00     0.00      100.00
    W/TAX




IN SUMMARY:

      DURING THE PAST  7 YEARS, $    152772. TOTAL COST IN 1975 DOLLARS PRODUCED

            254. MG WATER FOR AN AVERAGE COST OF $    602./ MG (1975 DOLLARS)











                                                                                                  PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

AUDUBON WATER COMPANY

3-3-004

4/ 8/76

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                                                                        3-3-004
                                                                        4/ 8/76
                                   AUDUBON WATER COMPANY
                                       SYSTEM FACTS
                                           1976
POPULATION - SMSA                                              --
             COUNTY                                            --
             CITY OR TOWN                                      --
             RETAIL SERVICE AREA                             6700.
AREA OF RETAIL SERVICE AREA                                     0.00 SQ MI
NUMBER OF METERS                                             1191.
NUMBER OF ACCOUNTS                                           1191.
NUMBER OF FLAT RATE ACCOUNTS                                    0.
PURCHASED WATER - RAW                                            0 MG
                  TREATED                                        0 MG
SOURCE WATER - GROUND                                         100.0 %
               SURFACE                                          0.0 %
PIPE IN SYSTEM                                                 20.0 MI
ELEVATIONS - INTAKES                                           --
             TREATMENT PLANTS                                  --
             SERVICE AREA MIN.                                  75 FT
             SERVICE AREA MAX.                                 325 FT
REVENUE PRODUCING WATER                                       142.0870 MG
TREATED WATER                                                 166.8650 MG
MAX. DAY                                                      .693 MG
MAX. HOUR                                                      --
FISCAL YEAR                                                  12/31
IMPLEMENTATION DATE                                         4/ 8/76
PROCESSING DATE                                             5/27/76

                                                                        PAGE  2
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3-3-004
4/ 8/76

AUDUBON WATER COMPANY

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	30058.	38529.	52149.	52473.
ACQUISITION	--	--	--	--	--	--	12725.	14656.	20902.	23397.
TREATMENT	--	--	--	--	--	--	3237.	4074.	1982.	1801.
DISTRIBUTION	--	--	--	--	--	--	3576.	6080.	6157.	5965.
TOTAL	10440.	16394.	21063.	24805.	39247.	36949.	49596.	63339.	81190.	83638.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	281.	269.	366.	369.
ACQUISITION	--	--	--	--	--	--	119.	102.	147.	165.
TREATMENT	--	--	--	--	--	--	30.	28.	14.	13.
DISTRIBUTION	--	--	--	--	--	--	33.	42.	43.	42.
TOTAL	413.	470.	440.	370.	455.	382.	463.	442.	570.	589.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	60.61	60.83	64.23	62.74
ACQUISITION	--	--	--	--	--	--	25.66	23.14	25.74	27.97
TREATMENT	--	--	--	--	--	--	6.53	6.43	2.44	2.15
DISTRIBUTION	--	--	--	--	--	--	7.21	9.60	7.58	7.13
TOTAL	--	--	--	--	--	--	100.00	100.00	100.00	100.00

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                                                                                       3-3-004
                                                                                       4/ 8/75
                                              AUDUBON WATER COMPANY

                                              TREATMENT INFORMATION
*************************************************      ***************************************************************
*    TREATMENT PROCESSES     *  % WATER TREATED  *      *   TREATMENT CHEMICALS   *          LB/MG TREATED            *
*************************************************      ***************************************************************

     CHLORINATION                    100.%


                                          10-YEAR CHEMICAL COST ANALYSIS

*************************************************************************************************************************
*                              1966      1967      1968      1969      1970      1971      1972      1973      1974      1975*
*************************************************************************************************************************

     TOTAL COST                 --        --        --        --        --        --        --        --       105.      136.

     TREATED WATER              25.       35.       48.       67.       86.      134.      114.      158.      162.      167.

     BILLED MG                  25.       35.       48.       67.       86.       97.      107.      143.      142.      142.

     $/MG TREATED               --        --        --        --        --        --        --        --        1.        1.

     $/MG BILLED                --        --        --        --        --        --        --        --        1.        1.
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AUDUBON WATER COMPANY

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW		03/26/76	TREATED		03/26/76
	MIN.	MAX.	TEST	MIN.	MAX.	TEST
NITRATE (N)	.05	2.5				
CHLORIDE	14.0	18.0				
IRON	<0.05	<0.05				

AUDUBON WATER COMPANY

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	--	--	--	--	9279.	8953.	12195.
MAN HOURS	--	--	--	--	--	--	--	4992.	4992.	4992.
MG BILLED CONSUMPTION	25.	35.	48.	67.	86.	97.	107.	143.	142.	142.
$/MG	--	--	--	--	--	--	--	65.	63.	86.
MH/MG	--	--	--	--	--	--	--	35.	35.	35.
$/MH	--	--	--	--	--	--	--	1.86	1.79	2.44

AUDUBON WATER COMPANY

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	2935.	2926.	3267.	3556.	5222.	6908.	9220.	9922.	13982.	15078.
K W H	--	--	--	--	--	--	--	--	3945.	3558.
$/MG	116.	84.	68.	53.	61.	71.	86.	69.	98.	105.
K W H/MG	--	--	--	--	--	--	--	--	28.	25.

AUDUBON WATER COMPANY

10-YEAR DEPRECIATION ALLOCATION

*	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975 *
DEPRECIATION COST $										
SUPPORT SERVICES	90.	115.	157.	204.	238.	74.	403.	475.	547.	585.
ACQUISITION	1167.	1485.	2034.	2635.	3080.	962.	5220.	6146.	7083.	7572.
TREATMENT	63.	80.	110.	143.	167.	52.	282.	332.	383.	410.
DISTRIBUTION	1788.	2276.	3116.	4038.	4720.	1473.	7998.	9417.	10853.	11602.
TOTAL	3108.	3957.	5418.	7020.	8206.	2562.	13905.	16372.	18867.	20169.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	4.	3.	3.	3.	3.	1.	4.	3.	4.	4.
ACQUISITION	46.	43.	42.	39.	36.	10.	49.	43.	50.	53.
TREATMENT	2.	2.	2.	2.	2.	1.	3.	2.	3.	3.
DISTRIBUTION	71.	65.	65.	60.	55.	15.	75.	66.	76.	82.
TOTAL	123.	113.	113.	105.	95.	26.	130.	114.	132.	142.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
ACQUISITION	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54
TREATMENT	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03
DISTRIBUTION	57.52	57.52	57.52	57.52	57.52	57.52	57.52	57.52	57.52	57.52
TOTAL	99.99	99.99	99.99	99.99	99.99	99.99	99.99	99.99	99.99	100.00
INTEREST COST $										
INTEREST $	1451.	1294.	1612.	2617.	1945.	2016.	1711.	19211.	32873.	32200.
INTEREST $/MG	57.	37.	34.	39.	23.	21.	16.	134.	231.	227.

AUDUBON WATER COMPANY

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	10440.	16394.	21063.	24805.	39247.	36949.	49596.	63339.	81190.	83638.
DEPRECIATION	3108.	3957.	5418.	7020.	8206.	2562.	13905.	16372.	18867.	20169.
INTEREST	1451.	1294.	1612.	2617.	1945.	2016.	1711.	19211.	32873.	32200.
TOTAL	14999.	21645.	28093.	34442.	49398.	41526.	65212.	98922.	132931.	136007.
$/MG	594.	620.	587.	514.	573.	429.	609.	691.	933.	957.
$/MG 1975 DOLLARS	986.	998.	910.	755.	796.	571.	786.	836.	1017.	957.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	455.	237.	159.	267.
O & M % OF TOTAL	69.60	75.74	74.98	72.02	79.45	88.98	76.05	64.03	61.08	61.50

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                                                                                                          3-3-004
                                                                                                          4/ 8/76
                                                  AUDUBON WATER COMPANY
                                                  COST SUMMARY FOR 1975
*********************************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL    *  TAXES   * TOTAL W/TAX *
*********************************************************************************************************************

 $/MG                373.         218.        16.          124.        227.       957.        2.         959.

 % OF TOTAL          39.01        22.77       1.63         12.92       23.68      100.00

 % OF TOTAL          38.94        22.73       1.62         12.89       23.63      99.80       0.20       100.00
     W/TAX




           IN SUMMARY:
                DURING THE PAST 10 YEARS, $    762534. TOTAL COST IN 1975 DOLLARS PRODUCED
                     893. MG WATER FOR AN AVERAGE COST OF $    854./ MG (1975 DOLLARS)








                                                                                                          PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF MANASSAS

3-4-001

3/29/76

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CITY OF MANASSAS
SYSTEM FACTS
1975

POPULATION - SMSA	3004540
COUNTY	151000
CITY OR TOWN	15000
RETAIL SERVICE AREA	15000.
AREA OF RETAIL SERVICE AREA	8.00 SQ MI
NUMBER OF METERS	3138.
NUMBER OF ACCOUNTS	3138.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	0 MG
SOURCE WATER - GROUND	0.0 %
SURFACE	100.0 %
PIPE IN SYSTEM	51 MI
ELEVATIONS - INTAKES	280 FT
TREATMENT PLANTS	270 FT
SERVICE AREA MIN.	200 FT
SERVICE AREA MAX.	445 FT
REVENUE PRODUCING WATER	455.4980 MG
TREATED WATER	557.3070 MG
MAX. DAY	2.50 MG
MAX. HOUR	--
FISCAL YEAR	6/30
IMPLEMENTATION DATE	3/29/76
PROCESSING DATE	5/27/76

3-4-001

3/29/76

CITY OF MANASSAS

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	9070.	6369.	25059.	27224.
ACQUISITION	--	--	--	--	--	--	6966.	1948.	1675.	2181.
TREATMENT	--	--	--	--	--	--	91620.	99940.	105111.	132032.
DISTRIBUTION	--	--	--	--	--	--	72687.	71757.	81029.	88506.
TOTAL	--	--	--	--	--	--	180344.	180014.	212874.	249944.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	24.	17.	57.	60.
ACQUISITION	--	--	--	--	--	--	18.	5.	4.	5.
TREATMENT	--	--	--	--	--	--	243.	263.	238.	290.
DISTRIBUTION	--	--	--	--	--	--	193.	189.	184.	194.
TOTAL	--	--	--	--	--	--	478.	475.	482.	549.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	5.03	3.56	11.77	10.89
ACQUISITION	--	--	--	--	--	--	3.86	1.08	0.79	0.87
TREATMENT	--	--	--	--	--	--	50.80	55.52	49.38	52.82
DISTRIBUTION	--	--	--	--	--	--	40.30	39.86	38.06	35.41
TOTAL	--	--	--	--	--	--	100.00	100.00	100.00	100.00

CITY OF MANASSAS

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
AERATION	100.%
SEDIMENTATION	100.%
COAGULATION	100.%
FILTRATION	100.%
CHLORINATION	100.%
ACTIVATED CARBON	100.%
FLUORIDATION	100.%
COAGULATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	66.9
FLUORIDE	33.4
CARBON	21.1
LIME	25.7
COPPER SULFATE	6.1
SODA ASH	320.3
AL SULFATE	323.2
PHOSPHATE	16.9

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	--	--	--	--	38785.	44593.
TREATED WATER	--	--	--	--	--	--	408.	527.	539.	557.
BILLED MG	--	--	--	--	--	--	378.	379.	441.	455.
$/MG TREATED	--	--	--	--	--	--	--	--	72.	80.
$/MG BILLED	--	--	--	--	--	--	--	--	88.	98.

CITY OF MANASSAS

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	RAW 10/01/75 TEST	TREATED MIN.	TREATED MAX.	TREATED 10/01/75 TEST
ARSENIC			<.1			<.1
BARIUM			<.01			<.01
CADMIUM			<.01			.03
CHROMIUM			.02			<.01
LEAD			.01			<.01
MERCURY			<.001			<.001
NITRATE (N)			<.1			<.1
SELENIUM			<.5			<.5
SILVER			<.01			<.01
FLUORIDE			1.4			1.0
ENDRIN						.0001
LINDANE						.0001
METHOXYCHLOR						.001
TOXAPHENE						.001
2,4-D						.001
2,4,5-TP						.0005
CHLORIDE			7.5			12.5
COPPER			.02			.04
IRON			.86			.076
MANGANESE			.017			.011
SULPHATE			16.0			32.0
ZINC			.03			.15

CITY OF MANASSAS

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	--	--	--	--	--	89561.	105837.
MAN HOURS	--	--	--	--	--	--	29120.	31200.	31200.	31200.
MG BILLED CONSUMPTION	--	--	--	--	--	--	378.	379.	441.	455.
$/MG	--	--	--	--	--	--	--	--	203.	232.
MH/MG	--	--	--	--	--	--	77.	82.	71.	69.
$/MH	--	--	--	--	--	--	--	--	2.87	3.39

CITY OF MANASSAS

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	--	--	--	--	--	--	--	28315.	43433.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	--	--	--	--	--	--	--	--	64.	95.
K W H/MG	--	--	--	--	--	--	--	--	--	--

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                                                                                    3-4-001
                                                                                    3/29/76

                                           CITY OF MANASSAS

                                     10-YEAR DEPRECIATION ALLOCATION

****************************************************************************************************
*                          1966     1967     1968     1969     1970     1971     1972     1973     1974     1975  *
****************************************************************************************************
                                           DEPRECIATION COST $
                                           -------------------

SUPPORT SERVICES            --       --       --       --       --       --    19148.   19260.   19483.   19801.
ACQUISITION                 --       --       --       --       --       --    57444.   57781.   58448.   59402.
TREATMENT                   --       --       --       --       --       --    82336.   82820.   83775.   85142.
DISTRIBUTION                --       --       --       --       --       --    32551.   32743.   33121.   33651.
  TOTAL                     --       --       --       --       --       --   191479.  192604.  194827.  198005.
                                         DEPRECIATION COST $/MG
                                         ----------------------

SUPPORT SERVICES            --       --       --       --       --       --       51.      51.      44.      43.
ACQUISITION                 --       --       --       --       --       --      152.     152.     132.     130.
TREATMENT                   --       --       --       --       --       --      218.     218.     190.     187.
DISTRIBUTION                --       --       --       --       --       --       86.      86.      75.      74.
  TOTAL                     --       --       --       --       --       --      507.     508.     441.     435.
                                      DEPRECIATION COST % OF TOTAL
                                      ----------------------------

SUPPORT SERVICES            --       --       --       --       --       --     10.00    10.00    10.00    10.00
ACQUISITION                 --       --       --       --       --       --     30.00    30.00    30.00    30.00
TREATMENT                   --       --       --       --       --       --     43.00    43.00    43.00    43.00
DISTRIBUTION                --       --       --       --       --       --     17.00    17.00    17.00    17.00
  TOTAL                     --       --       --       --       --       --    100.00   100.00   100.00   100.00
                                            INTEREST COST $
                                            ---------------

INTEREST $                  --       --       --       --       --       --   224002.  215767.  222904.  200169.
INTEREST $/MG               --       --       --       --       --       --      593.     569.     505.     439.

                                                                                    PAGE 14
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CITY OF MANASSAS

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	--	--	--	180344.	180014.	212874.	249944.
DEPRECIATION	--	--	--	--	--	--	191479.	192604.	194827.	198005.
INTEREST	--	--	--	--	--	--	224002.	215767.	222904.	200165.
TOTAL	--	--	--	--	--	--	595825.	588385.	630604.	648117.
$/MG	--	--	--	--	--	--	1578.	1551.	1429.	1423.
$/MG 1975 DOLLARS	--	--	--	--	--	--	2036.	1877.	1557.	1423.
SPECIAL TAXES	--	--	--	--	--	--	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	--	--	--	30.27	30.59	33.76	38.56

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                                                                                                   3-4-001
                                                                                                   3/29/76
                                              CITY OF MANASSAS
                                            COST SUMMARY FOR 1975
*****************************************************************************************************
*          *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*****************************************************************************************************

$/MG                103.          135.        477.          268.         439.      1423.       0.       1423.

% OF TOTAL          7.26          9.50       33.51         18.85        30.88     100.00

% OF TOTAL          7.26          9.50       33.51         18.85        30.88     100.00      0.00     100.00
    W/TAX




            IN SUMMARY:
                   DURING THE PAST  4 YEARS, $   2816035. TOTAL COST IN 1975 DOLLARS PRODUCED
                         1654. MG WATER FOR AN AVERAGE COST OF $   1703./ MG (1975 DOLLARS)




                                                                                                   PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF MANASSAS PARK

3-4-002

3/30/76

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215-597-7736

CITY OF MANASSAS PARK

SYSTEM FACTS

1975

POPULATION - SMSA	3004540
COUNTY	151000
CITY OR TOWN	6844
RETAIL SERVICE AREA	6844.
AREA OF RETAIL SERVICE AREA	2.00 SQ MI
NUMBER OF METERS	1800.
NUMBER OF ACCOUNTS	1800.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	0 MG
SOURCE WATER - GROUND	100.0 %
SURFACE	0.0 %
PIPE IN SYSTEM	16 MI
ELEVATIONS - INTAKES	--
TREATMENT PLANTS	--
SERVICE AREA MIN.	225 FT
SERVICE AREA MAX.	389 FT
REVENUE PRODUCING WATER	103.1800 MG
TREATED WATER	177.6000 MG
MAX. DAY	--
MAX. HOUR	--
FISCAL YEAR	6/30
IMPLEMENTATION DATE	3/30/76
PROCESSING DATE	5/27/76

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                              CITY OF MANASSAS PARK
                         10-YEAR KEY  O & M COST ANALYSIS

****************************************************************************************************
*                      1965     1966     1967     1968     1969     1970     1971     1972     1973     1974  *
****************************************************************************************************

                                        COST/YEAR
                                        ---------

SUPPORT SERVICES      12761.   11941.   13661.   14070.   15819.   17903.   19735.   17452.   16380.   20419.
ACQUISITION            4456.    4170.    4770.    4913.    5524.    6252.    6892.    6094.    5720.    7131.
TREATMENT                 0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
DISTRIBUTION           3038.    2843.    3253.    3350.    3766.    4263.    4699.    4156.    3900.    4862.
  TOTAL               20256.   18953.   21683.   22334.   25109.   28418.   31325.   27702.   26000.   32412.

                                        COST/MG
                                        -------

SUPPORT SERVICES        169.     156.     174.     180.     201.     223.     243.     167.     159.     193.
ACQUISITION              59.      55.      61.      63.      70.      78.      85.      58.      59.      69.
TREATMENT                 0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
DISTRIBUTION             40.      37.      41.      43.      48.      53.      58.      40.      40.      47.
  TOTAL                 268.     248.     277.     286.     320.     354.     386.     266.     268.     314.

                                        % OF TOTAL
                                        ----------

SUPPORT SERVICES       63.00    63.00    63.00    63.00    63.00    63.00    63.00    63.00    63.00    63.00
ACQUISITION            22.00    22.00    22.00    22.00    22.00    22.00    22.00    22.00    22.00    22.00
TREATMENT               0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
DISTRIBUTION           15.00    15.00    15.00    15.00    15.00    15.00    15.00    15.00    15.00    15.00
  TOTAL               100.00   100.00   100.00   100.00   100.00   100.00   100.00   100.00   100.00   100.00
```

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                                                                                 3-4-002
                                                                                 3/30/76
                                    CITY OF MANASSAS PARK

                                    TREATMENT INFORMATION

****************************************************      *****************************************************************
     TREATMENT PROCESSES     *  % WATER TREATED  *        *   TREATMENT CHEMICALS   *          LB/MG TREATED             *
****************************************************      *****************************************************************


                                 10-YEAR CHEMICAL COST ANALYSIS

*****************************************************************************************************************************
                       1965      1966      1967      1968      1969      1970      1971      1972      1973      1974*
*****************************************************************************************************************************

   TOTAL COST             0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
   TREATED WATER        108.      109.      112.      111.      112.      115.      116.      149.      139.      178.
   BILLED MG             75.       76.       78.       78.       79.       80.       81.      104.       97.      133.
   $/MG TREATED           0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
   $/MG BILLED            0.        0.        0.        0.        0.        0.        0.        0.        0.        0.




                                                                                 PAGE 6
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                                                                                                   3-4-002
                                                                                                   3/30/75
                                        CITY OF MANASSAS PARK
                                 RAW/TREATED WATER QUALITY INFORMATION
                                 (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)
*****************************************************************************************
*      CONSTITUENT       *            RAW           / /    *        TREATED         / /    *
*                        *      MIN.        MAX.    TEST   *    MIN.       MAX.     TEST   *
*****************************************************************************************
```

3-4-002
3/30/76

CITY OF MANASSAS PARK

10-YEAR LABOR COST ANALYSIS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
PAYROLL $	6289.	6762.	9050.	9663.	9384.	9879.	13157.	13667.	14089.	16243.
MAN HOURS	6240.	6240.	6240.	6240.	6240.	6240.	6240.	6240.	6240.	6240.
MG BILLED CONSUMPTION	75.	76.	78.	78.	79.	80.	81.	104.	97.	103.
$/MG	83.	89.	115.	124.	119.	123.	162.	131.	145.	157.
MH/MG	83.	82.	80.	80.	79.	78.	77.	60.	64.	60.
$/MH	1.01	1.08	1.45	1.55	1.50	1.58	2.11	2.19	2.26	2.60

3-4-002
3/30/76

CITY OF MANASSAS PARK

10-YEAR POWER COST ANALYSIS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
POWER $	6507.	6447.	7043.	6457.	6070.	6228.	5123.	5248.	4810.	5825.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	86.	84.	90.	83.	77.	78.	63.	50.	50.	55.
K W H/MG	--	--	--	--	--	--	--	--	--	--

```
                                        CITY OF MANASSAS PARK

                                  10-YEAR DEPRECIATION ALLOCATION

***************************************************************************************************************
*                       1965      1966      1967      1968      1969      1970      1971      1972      1973      1974   *
***************************************************************************************************************
                                       DEPRECIATION COST $
                                       -------------------

SUPPORT SERVICES        8669.     8669.     8729.     8795.     8814.     8829.     8832.     8883.     8933.    10804.
ACQUISITION             3027.     3027.     3048.     3071.     3078.     3083.     3084.     3102.     3120.     3773.
TREATMENT                 0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
DISTRIBUTION            2064.     2064.     2078.     2094.     2099.     2102.     2103.     2115.     2127.     2572.
  TOTAL                13760.    13760.    13855.    13961.    13991.    14014.    14020.    14100.    14180.    17149.
                                     DEPRECIATION COST $/MG
                                     ----------------------

SUPPORT SERVICES         115.      114.      111.      113.      112.      110.      109.       85.       92.      105.
ACQUISITION               40.       40.       39.       39.       39.       38.       38.       30.       32.       37.
TREATMENT                 0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
DISTRIBUTION              27.       27.       27.       27.       27.       26.       26.       20.       22.       25.
  TOTAL                  182.      180.      177.      179.      178.      174.      173.      135.      146.      165.
                                  DEPRECIATION COST % OF TOTAL
                                  ----------------------------

SUPPORT SERVICES        63.00     63.00     63.00     63.00     63.00     63.00     63.00     63.00     63.00     63.00
ACQUISITION             22.00     22.00     22.00     22.00     22.00     22.00     22.00     22.00     22.00     22.00
TREATMENT                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
DISTRIBUTION            15.00     15.00     15.00     15.00     15.00     15.00     15.00     15.00     15.00     15.00
  TOTAL                100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00
                                         INTEREST COST $
                                         ---------------

INTEREST $             22577.    21703.    20853.    19918.    18983.    18048.    17028.    16008.    14996.    13950.
INTEREST $/MG            299.      284.      266.      255.      242.      225.      210.      153.      154.      135.
```

CITY OF MANASSAS PARK

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
O & M	20256.	18953.	21683.	22334.	25109.	28418.	31325.	27702.	26000.	32412.
DEPRECIATION	13760.	13760.	13855.	13961.	13991.	14014.	14020.	14100.	14180.	17149.
INTEREST	22577.	21703.	20853.	19918.	18983.	18048.	17028.	16008.	14996.	13963.
TOTAL	56592.	54416.	56392.	56213.	58083.	60479.	62373.	57810.	55176.	63523.
$/MG	750.	713.	719.	721.	739.	753.	769.	554.	568.	615.
$/MG 1975 DOLLARS	1282.	1184.	1158.	1118.	1087.	1047.	1023.	715.	688.	671.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	35.79	34.83	38.45	39.73	43.23	46.99	50.22	47.92	47.12	51.03

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                                                                                     3-4-002
                                                                                     3/30/76
                                     CITY OF MANASSAS PARK

                                     COST SUMMARY FOR 1974
**************************************************************************************************
*         *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   * TAXES   * TOTAL W/TAX *
**************************************************************************************************

$/MG              303.          106.          0.           72.          135.      616.       0.        616.

% OF TOTAL        49.15         17.17         0.00         11.70        21.98     100.00

% OF TOTAL        49.15         17.17         0.00         11.70        21.98     100.00     0.00      100.00
   W/TAX




          IN SUMMARY:

               DURING THE PAST 10 YEARS, $    828003. TOTAL COST IN 1975 DOLLARS PRODUCED

                    853. MG WATER FOR AN AVERAGE COST OF $    971./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

TOWN OF CULPEPER

3-4-003

3/31/76

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3-4-003
3/31/76

TOWN OF CULPEPER
SYSTEM FACTS
1975

POPULATION - SMSA	NONE
COUNTY	20000
CITY OR TOWN	7269
RETAIL SERVICE AREA	7500.
AREA OF RETAIL SERVICE AREA	8.00 SQ MI
NUMBER OF METERS	2132.
NUMBER OF ACCOUNTS	2144.
NUMBER OF FLAT RATE ACCOUNTS	12.
PURCHASED WATER - RAW	0 MG
TREATED	0 MG
SOURCE WATER - GROUND	1.0 %
SURFACE	99.0 %
PIPE IN SYSTEM	35 MI
ELEVATIONS - INTAKES	354 FT
TREATMENT PLANTS	380 FT
SERVICE AREA MIN.	340 FT
SERVICE AREA MAX.	540 FT
REVENUE PRODUCING WATER	259.8440 MG
TREATED WATER	447.0100 MG
MAX. DAY	1.47 MG
MAX. HOUR	1.51 MG
FISCAL YEAR	6/30
IMPLEMENTATION DATE	3/31/76
PROCESSING DATE	5/27/76

3-4-003

3/31/76

TOWN OF CULPEPER

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	2847.	4108.	2482.	3265.	3812.	5610.	14615.	14487.	20596.	24920.
ACQUISITION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TREATMENT	17147.	18746.	14697.	19388.	24074.	30916.	34843.	45238.	57536.	84341.
DISTRIBUTION	19276.	23197.	19042.	21951.	32043.	29073.	37151.	37569.	51374.	69935.
TOTAL	39269.	46051.	36221.	44604.	59929.	65599.	86609.	97295.	129506.	179197.
COST/MG										
SUPPORT SERVICES	19.	25.	15.	18.	21.	28.	68.	72.	88.	96.
ACQUISITION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TREATMENT	117.	114.	90.	107.	132.	152.	162.	225.	247.	325.
DISTRIBUTION	132.	141.	117.	122.	176.	143.	172.	187.	221.	269.
TOTAL	269.	280.	223.	247.	329.	323.	402.	484.	556.	690.
% OF TOTAL										
SUPPORT SERVICES	7.25	8.92	6.85	7.32	6.36	8.55	16.87	14.89	15.90	13.91
ACQUISITION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TREATMENT	43.66	40.71	40.58	43.47	40.17	47.13	40.23	46.50	44.43	47.07
DISTRIBUTION	49.09	50.37	52.57	49.21	53.47	44.32	42.89	38.61	39.67	39.03
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TOWN OF CULPEPER

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED	TREATMENT CHEMICALS	LB/MG TREATED
SEDIMENTATION	100.%	CHLORINE	48.0
COAGULATION	100.%	LIME	121.3
FILTRATION	100.%	ALUM	409.6
CHLORINATION	100.%	SODA ASH	307.1
FLUORIDATION	100.%	H2SIF6 ACID 23%	44.2

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	4077.	4125.	2226.	4173.	3755.	6358.	6633.	13720.	14754.	33262.
TREATED WATER	251.	283.	280.	310.	317.	349.	371.	346.	400.	447.
BILLED MG	146.	164.	163.	180.	182.	203.	215.	201.	233.	250.
$/MG TREATED	16.	15.	8.	13.	12.	18.	18.	40.	37.	74.
$/MG BILLED	28.	25.	14.	23.	21.	31.	31.	68.	63.	128.

TOWN OF CULPEPER

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	/ / TEST	TREATED MIN.	TREATED MAX.	01/15/76 TEST
ARSENIC						<.003
BARIUM						<.5
CADMIUM						<.01
CHROMIUM						<.01
LEAD						.002
MERCURY						<.0005
NITRATE (N)						.43
SELENIUM						<.001
SILVER						<.01
FLUORIDE						<.62
COLOR						5.
COPPER						.02
IRON						.03
MANGANESE						.01
SULPHATE						24.
GROSS BETA						7.1+/-1.9

3-4-003

3/31/76

TOWN OF CULPEPER

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	20485.	23288.	19341.	25215.	29668.	43140.	45903.	54770.	72649.	80941.
MAN HOURS	10400.	10400.	10400.	14560.	14560.	14560.	16640.	18720.	18720.	20800.
MG BILLED CONSUMPTION	146.	164.	163.	180.	182.	203.	215.	201.	233.	260.
$/MG	140.	142.	119.	140.	163.	213.	213.	272.	312.	311.
MH/MG	71.	63.	64.	81.	80.	72.	77.	93.	80.	80.
$/MH	1.97	2.24	1.86	1.73	2.04	2.96	2.76	2.93	3.88	3.89

TOWN OF CULPEPER

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	7828.	8756.	7277.	9428.	9359.	10421.	10794.	12339.	13935.	17013.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	54.	53.	45.	52.	51.	51.	50.	61.	60.	63.
K W H/MG	--	--	--	--	--	--	--	--	--	--

```
                                     TOWN OF CULPEPER

                            10-YEAR DEPRECIATION ALLOCATION

***************************************************************************************************************
*                       1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
***************************************************************************************************************
                                        DEPRECIATION COST $
                                        -------------------

SUPPORT SERVICES          0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
ACCUISITION               0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
TREATMENT              3050.     3551.     4542.     5118.     5531.     5837.     5944.     6102.     6464.     6849.
DISTRIBUTION          11444.    13328.    17047.    19209.    20757.    21907.    22307.    22902.    24260.    25699.
  TOTAL               14494.    16879.    21589.    24327.    26288.    27744.    28251.    29004.    30724.    32549.
                                       DEPRECIATION COST $/MG
                                       ----------------------

SUPPORT SERVICES          0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
ACCUISITION               0.        0.        0.        0.        0.        0.        0.        0.        0.        0.
TREATMENT                21.       22.       28.       28.       30.       29.       28.       30.       28.       25.
DISTRIBUTION             78.       81.      105.      106.      114.      108.      104.      114.      104.       99.
  TOTAL                  99.      103.      133.      135.      144.      137.      131.      144.      132.      125.
                                    DEPRECIATION COST % OF TOTAL
                                    ----------------------------

SUPPORT SERVICES       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
ACCUISITION            0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
TREATMENT             21.04     21.04     21.04     21.04     21.04     21.04     21.04     21.04     21.04     21.04
DISTRIBUTION          78.96     78.96     78.96     78.96     78.96     78.96     78.96     78.96     78.95     78.96
  TOTAL              100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00
                                          INTEREST COST $
                                          ---------------

INTEREST $            15800.    23900.    23600.    23200.    22800.    22400.    22029.    21657.    23909.    34629.
INTEREST $/MG           108.      145.      145.      129.      125.      110.      102.      108.      103.      133.
```

3-4-003

3/31/76

TOWN OF CULPEPER

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	39269.	46051.	36221.	44604.	59929.	65599.	86609.	97295.	129506.	179197.
DEPRECIATION	14494.	16879.	21589.	24327.	26288.	27744.	28251.	29004.	30724.	32548.
INTEREST	15800.	23900.	23600.	23200.	22800.	22400.	22029.	21657.	23909.	34629.
TOTAL	69563.	86830.	81410.	92131.	109017.	115743.	136889.	147956.	184139.	246374.
$/MG	476.	528.	501.	511.	598.	570.	636.	736.	791.	948.
$/MG 1975 DOLLARS	790.	851.	776.	750.	832.	758.	820.	890.	862.	948.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	56.45	53.04	44.49	48.41	54.97	56.68	63.27	65.76	70.33	72.73

```
                                     TOWN OF CULPEPER

                                   COST SUMMARY FOR 1975

*******************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*******************************************************************************************************


$/MG                 96.          0.         351.         368.        133.       948.       0.        948.

% OF TOTAL          10.11        0.00        37.01        38.82       14.06     100.00

% OF TOTAL          10.11        0.00        37.01        38.82       14.06     100.00      0.00     100.00
   W/TAX




               IN SUMMARY:

                    DURING THE PAST 10 YEARS, $   1625059. TOTAL COST IN 1975 DOLLARS PRODUCED

                         1948. MG WATER FOR AN AVERAGE COST OF $    834./ MG (1975 DOLLARS)
```

APPENDIX B

This Appendix contains small water utilities printouts for Region V water systems. If explanantion of a data element is required, refer to Appendix A.

```
                    U. S. ENVIRONMENTAL PROTECTION AGENCY
                          WATER SUPPLY COST STUDY
                          EPA CONTRACT  68-03-2071
                                    FOR
                                WEST DUNDEE
                                  5-1-001
                                  6/22/76


            EPA PROJECT OFFICER                       ACT SYSTEMS PROGRAM MANAGER

            ROBERT CLARK                              WILLIAM KYLE ADAMS
            WATER SUPPLY RESEARCH DIV.                SUITE 200
            MUNICIPAL ENVIRONMENTAL                   807 WEST MORSE BLVD.
             RESEARCH LABORATORY                      WINTER PARK, FLORIDA 32789
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            CINCINNATI. OHIO 45260
             TELEPHONE: (513) 684-7209


UTILITY REPRESENTATIVE            STATE REPRESENTATIVE                 EPA REPRESENTATIVE

MR. RAY JOHNSON                   MR. MARVIN SAILLARD                  MR. F. DONALD MADDOX
SUPERINTENDENT OF PUBLIC WORKS    ENVIRONMENTAL PROTCTN ENGINEER       U. S. EPA
VILLAGE HALL                      FIELD OPERATIONS                     230 S. DEARBORNE
102 S. SECOND ST.                 DIV. OF PUBLIC WATER SUPPLIES        CHICAGO, ILLINOIS  60604
WEST DUNDEE. ILLINOIS  60118      33 S. STOLP AVE.                     (312) 353-7736
(312) 426-6161                    AURORA. ILLINOIS  60506
                                  (312) 896-5001
```

WEST DUNDEE
SYSTEM FACTS
1975

POPULATION - SMSA	--
COUNTY	276000
CITY OR TOWN	3500
RETAIL SERVICE AREA	3500.
AREA OF RETAIL SERVICE AREA	0.70 SQ MI
NUMBER OF METERS	1000.
NUMBER OF ACCOUNTS	1000.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	0 MG
SOURCE WATER - GROUND	100.0 %
SURFACE	0.0 %
PIPE IN SYSTEM	17.5 MI
ELEVATIONS - INTAKES	725 FT
TREATMENT PLANTS	
SERVICE AREA MIN.	712 FT
SERVICE AREA MAX.	780 FT
REVENUE PRODUCING WATER	124.6170 MG
TREATED WATER	163.2830 MG
MAX. DAY	.637 MG
MAX. HOUR	--
FISCAL YEAR	4/30
IMPLEMENTATION DATE	6/22/75
PROCESSING DATE	7/26/76

5-1-001

6/22/76

WEST DUNDEE

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	5000.
ACQUISITION	--	--	--	--	--	--	--	--	--	17000.
TREATMENT	--	--	--	--	--	--	--	--	--	1350.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	13450.
TOTAL	--	--	--	23737.	29155.	41106.	20682.	36719.	28645.	36800.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	40.
ACQUISITION	--	--	--	--	--	--	--	--	--	136.
TREATMENT	--	--	--	--	--	--	--	--	--	11.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	108.
TOTAL	--	--	--	212.	247.	359.	177.	330.	250.	295.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	13.59
ACQUISITION	--	--	--	--	--	--	--	--	--	46.20
TREATMENT	--	--	--	--	--	--	--	--	--	3.67
DISTRIBUTION	--	--	--	--	--	--	--	--	--	36.55
TOTAL	--	--	--	--	--	--	--	--	--	100.00

5-1-001
6/22/76

WEST DUNDEE

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
AERATION	99.%
CHLORINATION	100.%
FLUORIDATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	23.8
FLUORIDE	4.4

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	--	677.	715.	738.	900.	1160.
TREATED WATER	--	--	--	150.	158.	153.	156.	149.	157.	163.
BILLED MG	--	--	--	112.	118.	115.	117.	111.	114.	125.
$/MG TREATED	--	--	--	--	--	4.	5.	5.	6.	7.
$/MG BILLED	--	--	--	--	--	6.	6.	7.	8.	9.

WEST DUNDEE

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW		02/17/76	TREATED		02/17/76
	MIN.	MAX.	TEST	MIN.	MAX.	TEST
ARSENIC			0.00			0.00
BARIUM			6.5			7.3
CADMIUM			0.00			0.00
CHROMIUM			0.00			0.00
LEAD			0.00			0.00
MERCURY			0.0000			0.0001
NITRATE (N)			0.0			0.1
SELENIUM			0.00			0.00
SILVER			0.00			0.00
FLUORIDE			0.6			1.3
CHLORIDE			2.3			5.8
COPPER			0.01			0.00
IRON			0.1			0.0
MANGANESE			0.01			0.00
SULPHATE			2.			3.
ZINC			0.0			0.0
GROSS BETA			25.9+-2.5			22.5+-2.3
GROSS ALPHA			15.6+-3.2			12.8+-2.9

5-1-001

6/22/76

WEST DUNDEE

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	--	--	2477.	2974.	4259.	2744.	3735.
MAN HOURS	--	--	--	--	--	--	--	--	--	--
MG BILLED CONSUMPTION	--	--	--	112.	118.	115.	117.	111.	114.	125.
$/MG	--	--	--	--	--	22.	26.	38.	24.	33.
MH/MG	--	--	--	--	--	--	--	--	--	--
$/MH	--	--	--	--	--	--	--	--	--	--

WEST DUNDEE

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	5653.	7191.	7876.	6592.	8727.	8724.	10743.	13148.	15038.
K W H	--	411170.	518400.	560918.	443724.	546067.	518501.	600961.	571339.	629591.
$/MG	--	--	--	71.	56.	76.	75.	97.	115.	121.
K W H/MG	--	--	--	5021.	3757.	4767.	4449.	5401.	4992.	5052.

WEST DUNDEE

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
				DEPRECIATION COST $						
SUPPORT SERVICES	--	--	--	180.	180.	180.	180.	188.	192.	193.
ACQUISITION	--	--	--	2610.	2610.	2610.	2610.	2722.	2790.	2806.
TREATMENT	--	--	--	180.	180.	180.	180.	188.	192.	193.
DISTRIBUTION	--	--	--	6030.	6030.	6030.	6030.	6289.	6445.	6479.
TOTAL	--	--	--	9000.	9000.	9000.	9000.	9387.	9620.	9670.
				DEPRECIATION COST $/MG						
SUPPORT SERVICES	--	--	--	2.	2.	2.	2.	2.	2.	2.
ACQUISITION	--	--	--	23.	22.	23.	22.	24.	24.	23.
TREATMENT	--	--	--	2.	2.	2.	2.	2.	2.	2.
DISTRIBUTION	--	--	--	54.	51.	53.	52.	57.	56.	52.
TOTAL	--	--	--	81.	76.	79.	77.	84.	84.	78.
				DEPRECIATION COST % OF TOTAL						
SUPPORT SERVICES	--	--	--	2.00	2.00	2.00	2.00	2.00	2.00	2.00
ACQUISITION	--	--	--	29.00	29.00	29.00	29.00	29.00	29.00	29.00
TREATMENT	--	--	--	2.00	2.00	2.00	2.00	2.00	2.00	2.00
DISTRIBUTION	--	--	--	67.00	67.00	67.00	67.00	67.00	67.00	67.00
TOTAL	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00
				INTEREST COST $						
INTEREST $	--	--	--	0.	0.	0.	0.	0.	0.	0.
INTEREST $/MG	--	--	--	0.	0.	0.	0.	0.	0.	0.

WEST DUNDEE

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	23737.	29155.	41106.	20682.	36719.	28645.	36800.
DEPRECIATION	--	--	--	9000.	9000.	9000.	9000.	9387.	9620.	9670.
INTEREST	--	--	--	0.	0.	0.	0.	0.	0.	0.
TOTAL	--	--	--	32737.	38155.	50106.	29682.	46106.	38265.	46470.
$/MG	--	--	--	293.	323.	437.	255.	414.	334.	373.
$/MG 1975 DOLLARS	--	--	--	431.	449.	582.	329.	501.	364.	373.
SPECIAL TAXES	--	--	--	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	72.51	76.41	82.04	69.68	79.64	74.86	79.19

```
                                                                                                        5-1-001
                                                                                                        6/22/76
                                                   WEST DUNDEE
                                                COST SUMMARY FOR 1975
*************************************************************************************************************
*         *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*************************************************************************************************************

$/MG                  42.           159.        12.          160.          0.       373.         0.        373.

% OF TOTAL          11.18          42.62       3.32         42.89        0.00     100.00

% OF TOTAL          11.18          42.62       3.32         42.89        0.00     100.00       0.00     100.00
    W/TAX




          IN SUMMARY:
                DURING THE PAST  7 YEARS, $    350056. TOTAL COST IN 1975 DOLLARS PRODUCED
                      811. MG WATER FOR AN AVERAGE COST OF $    431./ MG (1975 DOLLARS)









                                                                                                        PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

ALGONQUN

5-1-002

6/23/76

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```
                         ALGONQUN
                       SYSTEM FACTS
                           1975
POPULATION - SMSA                                   N.A.
             COUNTY                               120000
             CITY OR TOWN                           4300
             RETAIL SERVICE AREA                    4000.
AREA OF RETAIL SERVICE AREA                            2.50 SQ MI
NUMBER OF METERS                                    1200.
NUMBER OF ACCOUNTS                                  1200.
NUMBER OF FLAT RATE ACCOUNTS                           0.
PURCHASED WATER - RAW                                   0 MG
                  TREATED                               0 MG
SOURCE WATER - GROUND                                100.0 %
               SURFACE                                 0.0 %
PIPE IN SYSTEM                                          --
ELEVATIONS - INTAKES
             TREATMENT PLANTS
             SERVICE AREA MIN.                         736 FT
             SERVICE AREA MAX.                         890 FT
REVENUE PRODUCING WATER                                96.9860 MG
TREATED WATER                                        149.5200 MG
MAX. DAY                                               .650 MG
MAX. HOUR                                               --
FISCAL YEAR                                          12/31
IMPLEMENTATION DATE                                6/23/76
PROCESSING DATE                                    7/26/76
```

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                                                                                        5-1-002
                                                                                        6/23/76
                                              ALGONQUIN
                                    10-YEAR KEY  O & M COST ANALYSIS

****************************************************************************************************
*                           1965     1966     1967     1968     1969     1970     1971     1972     1973     1974  *
****************************************************************************************************
                                              COST/YEAR
                                              ---------

SUPPORT SERVICES             --       --       --       --       --       --       --       --       --       --
ACQUISITION                  --       --       --       --       --       --       --       --       --       --
TREATMENT                    --       --       --       --       --       --       --       --       --       --
DISTRIBUTION                 --       --       --       --       --       --       --       --       --       --
  TOTAL                   18320.   20809.   28000.   27123.   32815.   46028.   43083.   48591.   50849.   58244.

                                              COST/MG
                                              -------

SUPPORT SERVICES             --       --       --       --       --       --       --       --       --       --
ACQUISITION                  --       --       --       --       --       --       --       --       --       --
TREATMENT                    --       --       --       --       --       --       --       --       --       --
DISTRIBUTION                 --       --       --       --       --       --       --       --       --       --
  TOTAL                     261.     259.     325.     300.     407.     593.     505.     558.     560.     601.

                                              % OF TOTAL
                                              ----------

SUPPORT SERVICES             --       --       --       --       --       --       --       --       --       --
ACQUISITION                  --       --       --       --       --       --       --       --       --       --
TREATMENT                    --       --       --       --       --       --       --       --       --       --
DISTRIBUTION                 --       --       --       --       --       --       --       --       --       --
  TOTAL                      --       --       --       --       --       --       --       --       --       --


                                                                                        PAGE  4
```

ALGONQUN

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%
FLUORIDATION	100.%
STABILIZATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	25.4
FLUORIDE	4.5
D-SOLV-GRANULAR	16.1

10-YEAR CHEMICAL COST ANALYSIS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOTAL COST	--	--	--	--	--	--	--	--	--	1720.
TREATED WATER	112.	128.	141.	178.	131.	142.	148.	179.	179.	150.
BILLED MG	70.	80.	86.	90.	81.	78.	85.	87.	91.	97.
$/MG TREATED	--	--	--	--	--	--	--	--	--	12.
$/MG BILLED	--	--	--	--	--	--	--	--	--	18.

ALGONQUIN

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	11/02/71 TEST	TREATED MIN.	TREATED MAX.	11/02/71 TEST
BARIUM	0.2	7.				
CADMIUM	0.00	0.00				
CHROMIUM	0.0	0.0				
LEAD	0.00	0.00				
MERCURY	<0.0005	<0.0005				
NITRATE (N)	3.4	0.0				
SILVER	0.0	0.0				
FLUORIDE	0.2	1.0				
CHLORIDE	23.	5.4				
COPPER	0.0	0.0				
IRON	0.0	0.05				
MANGANESE	0.0	0.0				
SULPHATE	63.	0				
ZINC	0.0	0.0				
GROSS BETA	2+-1	14+-3				
GROSS ALPHA	0+-0	7+-2				

ALGONQUIN

10-YEAR LABOR COST ANALYSIS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
PAYROLL $	7434.	10337.	12676.	15187.	19202.	22457.	23880.	25238.	27238.	29231.
MAN HOURS	--	--	--	--	--	--	--	--	--	2704.
MG BILLED CONSUMPTION	70.	80.	86.	90.	81.	78.	85.	87.	91.	97.
$/MG	106.	129.	147.	168.	238.	289.	280.	290.	300.	301.
MH/MG	--	--	--	--	--	--	--	--	--	28.
$/MH	--	--	--	--	--	--	--	--	--	10.81

ALGONQUIN

10-YEAR POWER COST ANALYSIS

```
***************************************************************************************************************
*                         1965     1966     1967     1968     1969     1970     1971     1972     1973     1974   *
***************************************************************************************************************

POWER $                  3407.    3388.    3779.    3839.    3372.    3716.    4576.    5920.    5883.    6810.

K W H                      --       --       --       --       --       --       --       --   317141.  355063.

$/MG                       49.      42.      44.      42.      42.      48.      54.      68.      65.      70.

K W H/MG                   --       --       --       --       --       --       --       --     3492.    3661.
```

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                                                                                              5-1-002
                                                                                              6/23/76
                                                 ALGONQUIN
                                       10-YEAR DEPRECIATION ALLOCATION
* ********************************************************************************************************
*
*                             1965      1966      1967      1968      1969      1970      1971      1972      1973      1974   *
* ********************************************************************************************************
                                             DEPRECIATION COST $
                                             -------------------

SUPPORT SERVICES               25.       25.      112.      115.      115.      115.      115.      119.      130.      153.
ACQUISITION                   313.      313.     1405.     1434.     1434.     1434.     1434.     1484.     1625.     1914.
TREATMENT                      25.       25.      112.      115.      115.      115.      115.      119.      130.      153.
DISTRIBUTION                  887.      887.     3989.     4072.     4072.     4072.     4072.     4214.     4616.     5437.
  TOTAL                      1250.     1250.     5619.     5736.     5736.     5736.     5736.     5936.     6501.     7653.
                                           DEPRECIATION COST $/MG
                                           ----------------------

SUPPORT SERVICES                0.        0.        1.        1.        1.        1.        1.        1.        1.        2.
ACQUISITION                     4.        4.       16.       16.       18.       18.       17.       17.       18.       20.
TREATMENT                       0.        0.        1.        1.        1.        1.        1.        1.        1.        2.
DISTRIBUTION                   13.       11.       46.       45.       50.       52.       48.       48.       51.       56.
  TOTAL                        18.       16.       65.       63.       71.       74.       67.       68.       72.       79.
                                        DEPRECIATION COST % OF TOTAL
                                        ----------------------------

SUPPORT SERVICES              2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00
ACQUISITION                  25.00     25.00     25.00     25.00     25.00     25.00     25.00     25.00     25.00     25.00
TREATMENT                     2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00
DISTRIBUTION                 71.00     71.00     71.00     71.00     71.00     71.00     71.00     71.00     71.00     71.00
  TOTAL                     100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00
                                              INTEREST COST $
                                              ---------------

INTEREST $                    4433.     4266.     4386.     4344.     4310.     4246.     4252.     4131.     4060.     3425.
INTEREST $/MG                   63.       53.       51.       48.       53.       55.       50.       47.       45.       35.
```

ALGONQUN

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
O & M	18320.	20809.	28000.	27123.	32815.	46028.	43083.	48591.	50849.	58244.
DEPRECIATION	1250.	1250.	5619.	5736.	5736.	5736.	5736.	5936.	6501.	7659.
INTEREST	4433.	4266.	4386.	4344.	4310.	4246.	4252.	4131.	4050.	3425.
TOTAL	24003.	26325.	38005.	37203.	42860.	56010.	53071.	58658.	61410.	69328.
$/MG	342.	328.	441.	411.	531.	722.	622.	674.	676.	715.
$/MG 1975 DOLLARS	585.	544.	711.	638.	781.	1003.	827.	869.	818.	779.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	76.32	79.05	73.67	72.91	76.56	82.18	81.18	82.84	82.80	84.01

```
                                                                                              5-1-002
                                                                                              6/23/75
                                                   ALGONQUN

                                             COST SUMMARY FOR 1974

**************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
**************************************************************************************************


$/MG              --          --          --          --          --          715.         0.       715.

% OF TOTAL        --          --          --          --          --          100.00

% OF TOTAL        --          --          --          --          --          100.00       0.00     100.00
    W/TAX




          IN SUMMARY:

                DURING THE PAST 10 YEARS, $    640580. TOTAL COST IN 1975 DOLLARS PRODUCED

                      846. MG WATER FOR AN AVERAGE COST OF $     758./ MG (1975 DOLLARS)
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

LAKE ZURICH

5-1-003

6/24/76

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```
                                                                              5-1-003
                                                                              6/24/76
                                   LAKE ZURICH
                                   SYSTEM FACTS
                                       1975
POPULATION - SMSA                                            --
             COUNTY                                          --
             CITY OR TOWN                                  6789
             RETAIL SERVICE AREA                           6789.
AREA OF RETAIL SERVICE AREA                                  3.50 SQ MI
NUMBER OF METERS                                           2035.
NUMBER OF ACCOUNTS                                         2035.
NUMBER OF FLAT RATE ACCOUNTS                                 0.
PURCHASED WATER - RAW                                          0 MG
                  TREATED                                      0 MG
SOURCE WATER - GROUND                                      100.0 %
               SURFACE                                       0.0 %
PIPE IN SYSTEM                                                15 MI
ELEVATIONS - INTAKES                                          --
             TREATMENT PLANTS                                855 FT
             SERVICE AREA MIN.                                --
             SERVICE AREA MAX.                                --
REVENUE PRODUCING WATER                                    249.2000 MG
TREATED WATER                                              323.0900 MG
MAX. DAY                                                      --
MAX. HOUR                                                     --
FISCAL YEAR                                                 4/30
IMPLEMENTATION DATE                                      6/24/76
PROCESSING DATE                                          7/25/75

                                                                              PAGE  2
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LAKE ZURICH

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	15563.
ACQUISITION	--	--	--	--	--	--	--	--	--	25000.
TREATMENT	--	--	--	--	--	--	--	--	--	4231.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	40000.
TOTAL	--	--	--	24379.	36752.	56055.	82193.	77061.	74641.	84794.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	62.
ACQUISITION	--	--	--	--	--	--	--	--	--	100.
TREATMENT	--	--	--	--	--	--	--	--	--	17.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	161.
TOTAL	--	--	--	133.	194.	283.	362.	338.	342.	340.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	18.35
ACQUISITION	--	--	--	--	--	--	--	--	--	29.48
TREATMENT	--	--	--	--	--	--	--	--	--	4.99
DISTRIBUTION	--	--	--	--	--	--	--	--	--	47.17
TOTAL	--	--	--	--	--	--	--	--	--	100.00

LAKE ZURICH

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	37.1

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	--	--	--	--	--	2367.
TREATED WATER	185.	183.	201.	206.	214.	225.	259.	250.	275.	323.
BILLED MG	--	--	181.	183.	189.	198.	227.	228.	218.	249.
$/MG TREATED	--	--	--	--	--	--	--	--	--	7.
$/MG BILLED	--	--	--	--	--	--	--	--	--	9.

LAKE ZURICH

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW		11/11/71	TREATED		04/23/71
	MIN.	MAX.	TEST	MIN.	MAX.	TEST
BARIUM	<0.1	2.3				
CADMIUM	0.00	0.00				
CHROMIUM	0.00	0.00				
LEAD	0.0	0.0				
NITRATE (N)	0.0	0.3				
FLUORIDE	0.6	1.0				
TURBIDITY	2.	3.				
COLOR	0	0				
ODOR	0	0				
CHLORIDE	6.	10.				
COPPER	0.01	0.01				
IRON	0.1	0.6				
MANGANESE	0.00	0.00				
SULPHATE	29.4	988.2				
ZINC	0.00	0.01				

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                                  LAKE ZURICH
                          10-YEAR LABOR COST ANALYSIS

***************************************************************************************************
*                             1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
***************************************************************************************************

PAYROLL $                      --        --        --        --        --        --        --        --        --        --

MAN HOURS                      --        --        --        --        --        --        --        --        --        --

MG BILLED CONSUMPTION          --        --       181.      183.      189.      198.      227.      228.      218.      249.

$/MG                           --        --        --        --        --        --        --        --        --        --

MH/MG                          --        --        --        --        --        --        --        --        --        --

$/MH                           --        --        --        --        --        --        --        --        --        --
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                                                                                        5-1-003

                                                                                        6/24/76
                                          LAKE ZURICH

                                   10-YEAR POWER COST ANALYSIS

********************************************************************************************************
*                      1966     1967     1968     1969     1970     1971     1972     1973     1974     1975   *
********************************************************************************************************

POWER $                  --       --       --       --       --       --       --       --       --    23424.

K W H                    --       --       --       --       --       --       --       --       -- 1173870.

$/MG                     --       --       --       --       --       --       --       --       --       94.

K W H/MG                 --       --       --       --       --       --       --       --       --     4711.
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LAKE ZURICH

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	--	--	--	896.	1165.	1217.	1403.	1849.	2139.	2197.
ACQUISITION	--	--	--	1792.	2330.	2433.	2807.	3699.	4277.	4394.
TREATMENT	--	--	--	358.	466.	487.	561.	740.	855.	879.
DISTRIBUTION	--	--	--	14696.	19109.	19952.	23016.	30329.	35073.	36469.
TOTAL	--	--	--	17922.	23304.	24332.	28068.	36987.	42771.	43939.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	--	--	--	5.	6.	6.	6.	8.	10.	9.
ACQUISITION	--	--	--	10.	12.	12.	12.	16.	20.	18.
TREATMENT	--	--	--	2.	2.	2.	2.	3.	4.	4.
DISTRIBUTION	--	--	--	80.	101.	101.	102.	133.	161.	145.
TOTAL	--	--	--	98.	123.	123.	124.	162.	196.	175.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	--	--	--	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ACQUISITION	--	--	--	10.00	10.00	10.00	10.00	10.00	10.00	10.00
TREATMENT	--	--	--	2.00	2.00	2.00	2.00	2.00	2.00	2.00
DISTRIBUTION	--	--	--	82.00	82.00	82.00	82.00	82.00	82.00	83.00
TOTAL	--	--	--	99.00	99.00	99.00	99.00	99.00	99.00	100.00
INTEREST COST $										
INTEREST $	--	--	--	20884.	28770.	36155.	54442.	69593.	68991.	65895.
INTEREST $/MG	--	--	--	114.	152.	183.	240.	305.	316.	254.

5-1-003

6/24/76

LAKE ZURICH

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	24379.	36752.	56055.	82193.	77061.	74641.	84794.
DEPRECIATION	--	--	--	17922.	23304.	24332.	28068.	36987.	42771.	43939.
INTEREST	--	--	--	20884.	28770.	36166.	54442.	69593.	68991.	65895.
TOTAL	--	--	--	63186.	88826.	116553.	164703.	183640.	186403.	194627.
$/MG	--	--	--	346.	470.	589.	726.	805.	853.	781.
$/MG 1975 DOLLARS	--	--	--	508.	653.	783.	937.	973.	930.	781.
SPECIAL TAXES	--	--	--	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	38.58	41.38	48.09	49.90	41.96	40.04	43.57

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                                                                                                   5-1-003
                                                                                                   6/24/76
                                              LAKE ZURICH

                                          COST SUMMARY FOR 1975
************************************************************************************************************
*         *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   * TAXES   * TOTAL W/TAX *
************************************************************************************************************

$/MG                  71.          118.        21.         307.         264.        781.        0.          781.

% OF TOTAL            9.12         15.10       2.63        39.29        33.86       100.00

% OF TOTAL            9.12         15.10       2.63        39.29        33.86       100.00      0.00        100.00
    W/TAX




           IN SUMMARY:

                 DURING THE PAST  7 YEARS. $   1203844. TOTAL COST IN 1975 DOLLARS PRODUCED
                      1492. MG WATER FOR AN AVERAGE COST OF $    807./ MG (1975 DOLLARS)




                                                                                                   PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY
WATER SUPPLY COST STUDY
EPA CONTRACT 68-03-2071
FOR
BURLINGTON
5-1-004
6/25/76

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                                                                      5-1-004
                                                                      6/25/76
                                     BURLINGTON
                                    SYSTEM FACTS
                                        1975
POPULATION - SMSA
                                                          N.A.
           COUNTY                                       251005
           CITY OR TOWN                                    390
           RETAIL SERVICE AREA                            384.
AREA OF RETAIL SERVICE AREA                                0.25 SQ MI
NUMBER OF METERS                                          146.
NUMBER OF ACCOUNTS                                        154.
NUMBER OF FLAT RATE ACCOUNTS                                8.
PURCHASED WATER - RAW                                       0 MG
                  TREATED                                   0 MG
SOURCE WATER - GROUND                                   100.0 %
               SURFACE                                    0.0 %
PIPE IN SYSTEM                                             --
ELEVATIONS - INTAKES                                       --
             TREATMENT PLANTS                              --
             SERVICE AREA MIN.                            910 FT
             SERVICE AREA MAX.                            935 FT
REVENUE PRODUCING WATER                                   20.5000 MG
TREATED WATER                                             24.1140 MG
MAX. DAY                                                  .080 MG
MAX. HOUR                                                  --
FISCAL YEAR                                               6/30
IMPLEMENTATION DATE                                     6/25/76
PROCESSING DATE                                         7/26/76

                                                                     PAGE  2
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BURLINGTON

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	746.	667.	675.	851.	571.	681.	957.	1050.	1722.	2682.
ACQUISITION	1238.	1523.	915.	1082.	1246.	1414.	1549.	1420.	1696.	2195.
TREATMENT	0.	0.	0.	50.	55.	72.	50.	100.	990.	2145.
DISTRIBUTION	2987.	2256.	2910.	3691.	1933.	2374.	3825.	4430.	4204.	3706.
TOTAL	4971.	4446.	4500.	5673.	3804.	4542.	6381.	7000.	8612.	10728.
COST/MG										
SUPPORT SERVICES	34.	33.	33.	42.	28.	33.	47.	51.	76.	131.
ACQUISITION	56.	75.	45.	53.	61.	69.	76.	70.	75.	107.
TREATMENT	0.	0.	0.	2.	3.	4.	2.	5.	44.	105.
DISTRIBUTION	134.	111.	143.	181.	95.	116.	188.	217.	185.	181.
TOTAL	223.	218.	221.	278.	186.	223.	313.	343.	379.	523.
% OF TOTAL										
SUPPORT SERVICES	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	20.00	25.00
ACQUISITION	24.90	34.26	20.33	19.06	32.75	31.14	24.27	20.29	19.69	20.46
TREATMENT	0.00	0.00	0.00	0.88	1.45	1.60	0.78	1.43	11.50	19.99
DISTRIBUTION	60.10	50.74	64.67	65.06	50.80	52.27	59.95	63.29	48.81	34.55
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

BURLINGTON

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%
FLUORIDATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	18.7
FLUORIDE	37.9
AQUADINE	15.1

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	50.	55.	72.	50.	89.	990.	2145.
TREATED WATER	26.	24.	24.	24.	24.	24.	24.	24.	27.	24.
BILLED MG	22.	20.	20.	20.	20.	20.	20.	20.	23.	20.
$/MG TREATED	--	--	--	2.	2.	3.	2.	4.	37.	89.
$/MG BILLED	--	--	--	2.	3.	4.	2.	4.	44.	135.

BURLINGTON

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	 MAX.	02/17/76 TEST	TREATED MIN.	 MAX.	02/17/76 TEST
ARSENIC			0.00			0.00
BARIUM			2.3			0.1
CADMIUM			0.00			0.00
CHROMIUM			0.00			0.00
LEAD			0.00			0.00
MERCURY			0.0000			0.0000
NITRATE (N)			0.3			0.1
SELENIUM			0.00			0.00
SILVER			0.00			0.00
FLUORIDE			0.6			1.1
CHLORIDE			1.5			7.3
COPPER			0.00			0.02
IRON			0.2			0.1
MANGANESE			0.00			0.00
SULPHATE			0.0			4.
ZINC			0.0			0.0
GROSS BETA			127+-2.2			5.0+-1.5
GROSS ALPHA			14.5+-3.0			2.2+-1.4

5-1-004

6/25/76

BURLINGTON

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	714.	842.	840.	1130.	1180.	1200.	1200.	1283.	2040.	2240.
MAN HOURS	372.	372.	372.	372.	372.	372.	372.	372.	372.	372.
MG BILLED CONSUMPTION	22.	20.	20.	20.	20.	20.	20.	20.	23.	20.
$/MG	32.	41.	41.	55.	58.	59.	59.	63.	90.	109.
MH/MG	17.	18.	18.	18.	18.	18.	18.	19.	16.	19.
$/MH	1.92	2.26	2.26	3.04	3.17	3.23	3.23	3.45	5.48	6.02

BURLINGTON

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	1238.	1523.	915.	1082.	1246.	1414.	1549.	1420.	1696.	2195.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	56.	75.	45.	53.	61.	69.	76.	70.	75.	107.
K W H/MG	--	--	--	--	--	--	--	--	--	--

BURLINGTON

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACQUISITION	265.	287.	303.	303.	303.	303.	303.	303.	332.	353.
TREATMENT	88.	96.	101.	101.	101.	101.	101.	101.	111.	119.
DISTRIBUTION	1415.	1532.	1617.	1617.	1617.	1617.	1617.	1617.	1769.	1880.
TOTAL	1769.	1915.	2021.	2021.	2021.	2021.	2021.	2021.	2211.	2350.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACQUISITION	12.	14.	15.	15.	15.	15.	15.	15.	15.	17.
TREATMENT	4.	5.	5.	5.	5.	5.	5.	5.	5.	5.
DISTRIBUTION	64.	75.	79.	79.	79.	79.	79.	79.	78.	92.
TOTAL	80.	94.	99.	99.	99.	99.	99.	99.	97.	115.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACQUISITION	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
TREATMENT	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DISTRIBUTION	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	605.	495.	385.	275.	110.	110.	0.	0.	0.	0.
INTEREST $/MG	27.	24.	19.	13.	5.	5.	0.	0.	0.	0.

BURLINGTON

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	4971.	4446.	4500.	5673.	3804.	4542.	6381.	7000.	8612.	10728.
DEPRECIATION	1769.	1915.	2021.	2021.	2021.	2021.	2021.	2021.	2211.	2350.
INTEREST	605.	495.	385.	275.	110.	110.	0.	0.	0.	0.
TOTAL	7345.	6857.	6906.	7969.	5935.	6673.	8402.	9021.	10823.	13078.
$/MG	330.	337.	339.	391.	291.	327.	412.	442.	477.	639.
$/MG 1975 DOLLARS	548.	542.	525.	574.	404.	435.	531.	535.	519.	639.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	67.68	64.85	65.16	71.19	64.09	68.06	75.95	77.60	79.57	82.03

```
                                                                                                    5-1-004
                                                                                                    6/25/76
                                         BURLINGTON

                                   COST SUMMARY FOR 1975
************************************************************************************************************
*      *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *  TOTAL   *  TAXES   * TOTAL W/TAX *
************************************************************************************************************

$/MG          131.         124.       110.         273.         0.        638.        0.        638.

% OF TOTAL    20.51        19.48      17.30        42.71        0.00      100.00

% OF TOTAL    20.51        19.48      17.30        42.71        0.00      100.00      0.00      100.00
   W/TAX




        IN SUMMARY:

             DURING THE PAST 10 YEARS, $    109406. TOTAL COST IN 1975 DOLLARS PRODUCED

                  208. MG WATER FOR AN AVERAGE COST OF $    525./ MG (1975 DOLLARS)




                                                                                                    PAGE 10
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

TOWN OF LOWELL

5-2-001

6/21/76

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                                                                                  5-2-001
                                                                                  6/21/76
                                     TOWN OF LOWELL
                                     SYSTEM FACTS
                                         1975
POPULATION - SMSA                                               N.A.
           COUNTY                                             546253
           CITY OR TOWN                                         3839
           RETAIL SERVICE AREA                                  5304.
AREA OF RETAIL SERVICE AREA                                        4.00 SQ MI
NUMBER OF METERS                                                1612.
NUMBER OF ACCOUNTS                                              1612.
NUMBER OF FLAT RATE ACCOUNTS                                       0.
PURCHASED WATER - RAW                                               0 MG
                  TREATED                                           0 MG
SOURCE WATER - GROUND                                           100.0 %
               SURFACE                                            0.0 %
PIPE IN SYSTEM                                                    16 MI
ELEVATIONS - INTAKES                                              --
             TREATMENT PLANTS                                     --
             SERVICE AREA MIN.                                    --
             SERVICE AREA MAX.                                    --
REVENUE PRODUCING WATER                                         151.7000 MG
TREATED WATER                                                   264.3400 MG
MAX. DAY                                                        .796 MG
MAX. HOUR                                                       .864 MG
FISCAL YEAR                                                     12/31
IMPLEMENTATION DATE                                           6/21/76
PROCESSING DATE                                               7/26/76

                                                                                  PAGE  2
```

TOWN OF LOWELL

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
				COST/YEAR						
SUPPORT SERVICES	--	--	--	--	--	--	--	--	32033.	42708.
ACQUISITION	--	--	--	--	--	--	--	--	14528.	21362.
TREATMENT	--	--	--	--	--	--	--	--	12159.	13556.
DISTRIBUTION	--	--	--	--	--	--	--	--	33767.	63327.
TOTAL	35584.	40000.	46640.	48057.	59966.	71737.	90038.	102464.	92487.	140952.
				COST/MG						
SUPPORT SERVICES	--	--	--	--	--	--	--	--	206.	282.
ACQUISITION	--	--	--	--	--	--	--	--	93.	141.
TREATMENT	--	--	--	--	--	--	--	--	78.	89.
DISTRIBUTION	--	--	--	--	--	--	--	--	217.	417.
TOTAL	385.	476.	502.	496.	534.	630.	713.	695.	595.	929.
				% OF TOTAL						
SUPPORT SERVICES	--	--	--	--	--	--	--	--	34.63	30.30
ACQUISITION	--	--	--	--	--	--	--	--	15.71	15.16
TREATMENT	--	--	--	--	--	--	--	--	13.15	9.62
DISTRIBUTION	--	--	--	--	--	--	--	--	36.51	44.93
TOTAL	--	--	--	--	--	--	--	--	100.00	100.00

TOWN OF LOWELL

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
AERATION	100.%
FILTRATION	100.%
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	211.8

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	6000.	6000.	6767.	6105.	6558.	5379.	5000.	3185.	5060.	6954.
TREATED WATER	109.	120.	130.	139.	147.	180.	191.	237.	238.	264.
BILLED MG	92.	84.	93.	97.	112.	114.	126.	147.	155.	152.
$/MG TREATED	55.	50.	52.	44.	45.	30.	26.	13.	21.	26.
$/MG BILLED	65.	71.	73.	63.	58.	47.	40.	22.	33.	46.

TOWN OF LOWELL

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	 MAX.	02/12/75 TEST	TREATED MIN.	 MAX.	12/01/75 TEST
ARSENIC			<.01			
CADMIUM			<.01			
CHROMIUM			<.01			
LEAD			<.02			.02
NITRATE (N)			<.01			.5
SILVER			<.01			
FLUORIDE			4.1			3.8
CHLORIDE			69			96
IRON			0.3			0.1
MANGANESE			<.02			<.02
SULPHATE			47			51
ZINC			.05			

TOWN OF LOWELL

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	13774.	14000.	21195.	21452.	22080.	27293.	32000.	42940.	43255.	44613.
MAN HOURS	--	--	--	--	--	--	--	--	--	--
MG BILLED CONSUMPTION	92.	84.	93.	97.	112.	114.	126.	147.	155.	152.
$/MG	149.	167.	228.	222.	196.	240.	253.	291.	278.	294.
MH/MG	--	--	--	--	--	--	--	--	--	--
$/MH	--	--	--	--	--	--	--	--	--	--

TOWN OF LOWELL

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	3413.	4000.	4393.	6550.	7405.	6811.	9000.	10568.	9347.	13796.
K W H	157188.	--	242073.	292237.	317386.	387600.	400000.	473674.	490360.	561123.
$/MG	37.	48.	47.	68.	66.	60.	71.	72.	60.	91.
K W H/MG	1701.	--	2603.	3019.	2824.	3403.	3167.	3214.	3153.	3699.

```
                                        TOWN OF LOWELL

                               10-YEAR DEPRECIATION ALLOCATION

****************************************************************************************************
*                         1966     1967     1968     1969     1970     1971     1972     1973     1974     1975   *
****************************************************************************************************
                                      DEPRECIATION COST $
                                      -------------------

SUPPORT SERVICES          210.     220.     228.     368.     388.     408.     428.     448.     468.     492.

ACQUISITION               735.     770.     798.    1288.    1358.    1428.    1498.    1568.    1640.    1720.

TREATMENT                1890.    1980.    2052.    3312.    3492.    3672.    3852.    4032.    4216.    4424.

DISTRIBUTION             7665.    8030.    8322.   13432.   14162.   14892.   15622.   16352.   17099.   17942.

  TOTAL                 10500.   11000.   11400.   18400.   19400.   20400.   21400.   22400.   23423.   24578.
                                    DEPRECIATION COST $/MG
                                    ----------------------

SUPPORT SERVICES            2.       3.       2.       4.       3.       4.       3.       3.       3.       3.

ACQUISITION                 8.       9.       9.      13.      12.      13.      12.      11.      11.      11.

TREATMENT                  20.      24.      22.      34.      31.      32.      30.      27.      27.      29.

DISTRIBUTION               83.      96.      89.     139.     126.     131.     124.     111.     110.     118.

  TOTAL                   114.     131.     123.     190.     173.     179.     169.     152.     151.     162.
                                 DEPRECIATION COST % OF TOTAL
                                 ----------------------------

SUPPORT SERVICES          2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00

ACQUISITION               7.00     7.00     7.00     7.00     7.00     7.00     7.00     7.00     7.00     7.00

TREATMENT                18.00    18.00    18.00    18.00    18.00    18.00    18.00    18.00    18.00    18.00

DISTRIBUTION             73.00    73.00    73.00    73.00    73.00    73.00    73.00    73.00    73.00    73.00

  TOTAL                 100.00   100.00   100.00   100.00   100.00   100.00   100.00   100.00   100.00   100.00
                                       INTEREST COST $
                                       ---------------

INTEREST $               7260.   70400.    6800.   21059.   23623.   23199.   22716.   22204.   21692.   21160.

INTEREST $/MG              79.     838.      73.     218.     210.     204.     180.     151.     139.     139.
```

5-2-001
6/21/76

TOWN OF LOWELL

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	35584.	40000.	46640.	48057.	59966.	71737.	90038.	102464.	92487.	140952.
DEPRECIATION	10500.	11000.	11400.	18400.	19400.	20400.	21400.	22400.	23423.	24578.
INTEREST	7260.	70400.	6800.	21059.	23623.	23199.	22716.	22204.	21692.	21160.
TOTAL	53344.	121400.	64840.	87516.	102989.	115336.	134154.	147068.	137602.	186691.
$/MG	577.	1445.	697.	904.	916.	1013.	1062.	998.	885.	1231.
$/MG 1975 DOLLARS	958.	2327.	1081.	1329.	1274.	1347.	1370.	1207.	965.	1231.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	66.71	32.95	71.93	54.91	58.23	62.20	67.12	69.67	67.21	75.50

```
                                                                                              5-2-001
                                                                                              6/21/76
                                               TOWN OF LOWELL
                                           COST SUMMARY FOR 1975
*****************************************************************************************************
*          *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*****************************************************************************************************

$/MG               285.          152.        119.          536.         139.      1231.        0.      1231.

% OF TUTAL         23.14         12.36       9.63          43.53        11.33     100.00

% OF TUTAL         23.14         12.36       9.63          43.53        11.33     100.00      0.00     100.00
   W/TAX



            IN SUMMARY:
                 DURING THE PAST 10 YEARS, $   1497395. TOTAL COST IN 1975 DOLLARS PRODUCED
                      1173. MG WATER FOR AN AVERAGE COST OF $   1276./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF LEBANON

5-5-002

6/15/76

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CITY OF LEBANON
SYSTEM FACTS
1975

POPULATION - SMSA	--
COUNTY	90000
CITY OR TOWN	10000
RETAIL SERVICE AREA	10050.
AREA OF RETAIL SERVICE AREA	6.70 SQ MI
NUMBER OF METERS	2466.
NUMBER OF ACCOUNTS	2466.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	0 MG
SOURCE WATER - GROUND	100.0 %
SURFACE	0.0 %
PIPE IN SYSTEM	33 MI
ELEVATIONS - INTAKES	
TREATMENT PLANTS	690 FT
SERVICE AREA MIN.	670 FT
SERVICE AREA MAX.	965 FT
REVENUE PRODUCING WATER	245.7800 MG
TREATED WATER	429.0000 MG
MAX. DAY	60 MG
MAX. HOUR	--
FISCAL YEAR	12/31
IMPLEMENTATION DATE	6/15/76
PROCESSING DATE	7/26/76

5-5-002

6/15/76

CITY OF LEBANON

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	14318.	14304.	23736.	20732.	28666.	28594.	28518.	31348.	32315.	37077.
ACQUISITION	4937.	8052.	8562.	10083.	11974.	11638.	12199.	19591.	19344.	25773.
TREATMENT	5578.	8753.	9217.	10879.	13311.	12542.	13014.	20463.	20152.	26581.
DISTRIBUTION	26656.	25683.	25475.	30208.	45870.	43867.	51231.	61490.	67387.	71460.
TOTAL	51490.	56792.	66990.	71902.	99821.	96640.	104962.	132891.	139198.	160887.
COST/MG										
SUPPORT SERVICES	48.	43.	65.	49.	82.	66.	83.	94.	117.	151.
ACQUISITION	16.	24.	24.	24.	34.	27.	35.	59.	70.	105.
TREATMENT	19.	26.	25.	25.	38.	29.	38.	61.	73.	108.
DISTRIBUTION	89.	77.	70.	71.	130.	101.	149.	184.	244.	291.
TOTAL	172.	171.	185.	168.	284.	222.	305.	398.	503.	655.
% OF TOTAL										
SUPPORT SERVICES	27.81	25.19	35.43	28.83	28.72	29.59	27.17	23.59	23.22	23.05
ACQUISITION	9.59	14.18	12.78	14.02	12.00	12.04	11.62	14.74	13.90	16.02
TREATMENT	10.83	15.41	13.76	15.13	13.34	12.98	12.40	15.40	14.48	16.52
DISTRIBUTION	51.77	45.22	38.03	42.01	45.95	45.39	48.81	46.27	48.41	44.42
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

CITY OF LEBANON

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
AERATION	100.%
FILTRATION	100.%
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	8.5

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	--	--	--	--	555.	895.
TREATED WATER	344.	390.	425.	454.	464.	544.	536.	433.	387.	429.
BILLED MG	299.	332.	363.	427.	352.	436.	345.	334.	277.	246.
$/MG TREATED	--	--	--	--	--	--	--	--	1.	2.
$/MG BILLED	--	--	--	--	--	--	--	--	2.	4.

CITY OF LEBANON

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	12/12/74 TEST	TREATED MIN.	TREATED MAX.	12/12/74 TEST
BARIUM			0.			0.
CADMIUM			0.			0.
CHROMIUM			0.			0.
LEAD			0.			0.
NITRATE (N)			0.09			0.19
SILVER			0.			0.
FLUORIDE			0.32			0.28
TURBIDITY			8.4			0.4
COLOR			1.			1.
CHLORIDE			43.			40.
COPPER			0.			0
FOAMING AGENTS			0.0			0.0
IRON			2.0			0.11
MANGANESE			0.13			0.
SULPHATE			92.			94.
ZINC			0.			0.
GROSS BETA						0.
GROSS ALPHA						0.

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                                                                                              5-5-002
                                                                                              6/15/76
                                              CITY OF LEBANON
                                         10-YEAR LABOR COST ANALYSIS

*******************************************************************************************************
*                               1966     1967     1968     1969     1970     1971     1972     1973     1974     1975  *
*******************************************************************************************************

PAYROLL $                     26677.   30576.   34942.   40697.   50302.   55876.   63200.   67769.   73372.   79309.

MAN HOURS                     19760.   19760.   19760.   21840.   21840.   21840.   23920.   28080.   26000.   23920.

MG BILLED CONSUMPTION           299.     332.     363.     427.     352.     436.     345.     334.     277.     246.

$/MG                             89.      92.      96.      95.     143.     128.     183.     203.     265.     323.

MH/MG                            66.      60.      54.      51.      62.      50.      69.      84.      94.      97.

$/MH                            1.35     1.55     1.77     1.86     2.30     2.56     2.64     2.41     2.82     3.32
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CITY OF LEBANON

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	12805.	14034.	13115.	15938.	26742.	18080.	16296.	17414.	16161.	16222.
K W H	743109.	844302.	872622.	1011622.	1982123.	1025990.	981578.	934798.	867541.	870803.
$/MG	43.	42.	36.	37.	76.	41.	47.	52.	58.	66.
K W H/MG	2482.	2545.	2405.	2369.	5637.	2355.	2848.	2797.	3137.	3543.

5-5-002

6/15/76

CITY OF LEBANON

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
					DEPRECIATION COST $					
SUPPORT SERVICES	5190.	5235.	5282.	5319.	5354.	5380.	5407.	5436.	5456.	5500.
ACQUISITION	8304.	8376.	8451.	8510.	8566.	8608.	8651.	8697.	8730.	8800.
TREATMENT	2076.	2094.	2113.	2127.	2141.	2152.	2163.	2174.	2183.	2200.
DISTRIBUTION	88230.	88995.	89790.	90417.	91011.	91460.	91921.	92406.	92757.	93500.
TOTAL	103800.	104700.	105635.	106373.	107072.	107600.	108142.	108713.	109126.	110000.
					DEPRECIATION COST $/MG					
SUPPORT SERVICES	17.	16.	15.	12.	15.	12.	16.	16.	20.	22.
ACQUISITION	28.	25.	23.	20.	24.	20.	25.	26.	32.	36.
TREATMENT	7.	6.	6.	5.	6.	5.	6.	7.	8.	9.
DISTRIBUTION	295.	268.	248.	212.	259.	210.	267.	276.	335.	380.
TOTAL	347.	316.	291.	249.	304.	247.	314.	325.	395.	448.
					DEPRECIATION COST % OF TOTAL					
SUPPORT SERVICES	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ACQUISITION	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
TREATMENT	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
DISTRIBUTION	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					INTEREST COST $					
INTEREST $	7812.	6674.	6237.	5800.	11350.	28725.	22126.	43712.	30312.	28500.
INTEREST $/MG	26.	20.	17.	14.	32.	66.	64.	131.	110.	116.

5-5-002
6/15/76

CITY OF LEBANON

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	51490.	56792.	66990.	71902.	99821.	966[illegible]	104962.	132891.	139198.	160887.
DEPRECIATION	103800.	104700.	105635.	106373.	107072.	107600.	108142.	108713.	109126.	110000.
INTEREST	7812.	6674.	6237.	5800.	11350.	28725.	22126.	43712.	30312.	28503.
TOTAL	163102.	168166.	178862.	184075.	218243.	232965.	235230.	285316.	278637.	299387.
$/MG	545.	507.	493.	431.	621.	535.	683.	854.	1008.	1218.
$/MG 1975 DOLLARS	904.	816.	764.	634.	863.	711.	881.	1033.	1098.	1218.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	31.57	33.77	37.45	39.06	45.74	41.48	44.62	46.58	49.96	53.74

```
                              CITY OF LEBANON

                            COST SUMMARY FOR 1975

****************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
****************************************************************************************************

$/MG              173.         141.       117.         671.        116.     1218.       0.      1218.

% OF TOTAL        14.22        11.55      9.61         55.10       9.52     100.00

% OF TOTAL        14.22        11.55      9.61         55.10       9.52     100.00      0.00    100.00
   W/TAX




          IN SUMMARY:

               DURING THE PAST 10 YEARS, $   2954304. TOTAL COST IN 1975 DOLLARS PRODUCED

                  3409. MG WATER FOR AN AVERAGE COST OF $    867./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

VILLAGE OF BATAVIA

5-5-004

6/17/76

EPA PROJECT OFFICER

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E P A REGIONAL REPRESENTATIVE

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230 S. DEARBORNE
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VILLAGE OF BATAVIA
SYSTEM FACTS
1975

POPULATION - SMSA	--
COUNTY	95725
CITY OR TOWN	2100
RETAIL SERVICE AREA	2100.
AREA OF RETAIL SERVICE AREA	2.10 SQ MI
NUMBER OF METERS	600.
NUMBER OF ACCOUNTS	600.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	0 MG
SOURCE WATER - GROUND	0.0 %
SURFACE	100.0 %
PIPE IN SYSTEM	10 MI
ELEVATIONS - INTAKES	--
TREATMENT PLANTS	--
SERVICE AREA MIN.	--
SERVICE AREA MAX.	--
REVENUE PRODUCING WATER	46.9800 MG
TREATED WATER	58.0140 MG
MAX. DAY	.240 MG
MAX. HOUR	.520 MG
FISCAL YEAR	12/31
IMPLEMENTATION DATE	6/17/76
PROCESSING DATE	7/26/76

5-5-004
6/17/76

VILLAGE OF BATAVIA

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	6761.	6126.
ACQUISITION	--	--	--	--	--	--	--	--	2415.	2188.
TREATMENT	--	--	--	--	--	--	--	--	6278.	5688.
DISTRIBUTION	--	--	--	--	--	--	--	--	32841.	29753.
TOTAL	--	--	--	--	33679.	34766.	37868.	36690.	48296.	43755.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	136.	130.
ACQUISITION	--	--	--	--	--	--	--	--	48.	47.
TREATMENT	--	--	--	--	--	--	--	--	126.	121.
DISTRIBUTION	--	--	--	--	--	--	--	--	660.	633.
TOTAL	--	--	--	--	705.	717.	780.	760.	970.	931.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	14.00	14.00
ACQUISITION	--	--	--	--	--	--	--	--	5.00	5.00
TREATMENT	--	--	--	--	--	--	--	--	13.00	13.00
DISTRIBUTION	--	--	--	--	--	--	--	--	68.00	68.00
TOTAL	--	--	--	--	--	--	--	--	100.00	100.00

VILLAGE OF BATAVIA

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
SEDIMENTATION	100.%
FILTRATION	100.%
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	37.6
CARBON	0.8
LIME	1532.8
ALUM	375.0
CO2	49.1

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	--	--	--	2715.	3987.	--
TREATED WATER	62.	66.	68.	63.	59.	60.	60.	60.	61.	58.
BILLED MG	50.	61.	55.	51.	48.	48.	49.	48.	50.	47.
$/MG TREATED	--	--	--	--	--	--	--	46.	65.	--
$/MG BILLED	--	--	--	--	--	--	--	56.	80.	--

```
                          VILLAGE OF BATAVIA
                RAW/TREATED WATER QUALITY INFORMATION
             (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)
**********************************************************************************
*    CONSTITUENT     *           RAW          / /   *       TREATED          / /  *
*                    *    MIN.        MAX.    TEST  *   MIN.        MAX.    TEST  *
**********************************************************************************
```

VILLAGE OF BATAVIA

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	--	--	16413.	--	18551.	17509.	--
MAN HOURS	6240.	6240.	6240.	6240.	6240.	4160.	4160.	4160.	4160.	4160.
MG BILLED CONSUMPTION	50.	61.	55.	51.	48.	48.	49.	48.	50.	47.
$/MG	--	--	--	--	--	339.	--	384.	352.	--
MH/MG	124.	102.	114.	122.	131.	86.	86.	86.	84.	89.
$/MH	--	--	--	--	--	3.95	--	4.46	4.21	--

VILLAGE OF BATAVIA

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	--	--	--	--	--	--	4914.	4952.	--
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	--	--	--	--	--	--	--	102.	99.	--
K W H/MG	--	--	--	--	--	--	--	--	--	--

VILLAGE OF BATAVIA

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	--	--	--	--	120.	121.	127.	127.	128.	128.
ACQUISITION	--	--	--	--	1380.	1387.	1455.	1458.	1471.	1476.
TREATMENT	--	--	--	--	300.	301.	316.	317.	320.	321.
DISTRIBUTION	--	--	--	--	4200.	4220.	4428.	4438.	4476.	4491.
TOTAL	--	--	--	--	6000.	6029.	6326.	6340.	6395.	6415.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	--	--	--	--	3.	2.	3.	3.	3.	3.
ACQUISITION	--	--	--	--	29.	29.	30.	30.	30.	31.
TREATMENT	--	--	--	--	6.	6.	7.	7.	6.	7.
DISTRIBUTION	--	--	--	--	88.	87.	91.	92.	90.	96.
TOTAL	--	--	--	--	126.	124.	130.	131.	128.	137.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	--	--	--	--	2.00	2.00	2.00	2.00	2.00	2.00
ACQUISITION	--	--	--	--	23.00	23.00	23.00	23.00	23.00	23.00
TREATMENT	--	--	--	--	5.00	5.00	5.00	5.00	5.00	5.00
DISTRIBUTION	--	--	--	--	70.00	70.00	70.00	70.00	70.00	70.00
TOTAL	--	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	--	--	--	--	14750.	14600.	14450.	14300.	14150.	14000.
INTEREST $/MG	--	--	--	--	309.	301.	298.	296.	284.	298.

5-5-004

6/17/76

VILLAGE OF BATAVIA

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	--	33679.	34766.	37868.	36690.	48296.	43755.
DEPRECIATION	--	--	--	--	6000.	6029.	6326.	6340.	6395.	6415.
INTEREST	--	--	--	--	14750.	14600.	14450.	14300.	14150.	14000.
TOTAL	--	--	--	--	54429.	55395.	58644.	57330.	68841.	64173.
$/MG	--	--	--	--	1139.	1143.	120[illegible].	1188.	1383.	1366.
$/MG 1975 DOLLARS	--	--	--	--	1583.	1520.	1559.	1437.	1507.	1366.
SPECIAL TAXES	--	--	--	--	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	--	61.88	62.76	64.57	64.00	70.16	68.19

```
                                                                                          5-5-004

                                                                                          6/17/76

                                         VILLAGE OF BATAVIA

                                         COST SUMMARY FOR 1975

***************************************************************************************************
*         *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
***************************************************************************************************


$/MG              133.          78.        128.          729.         298.      1366.        0.       1366.

% OF TOTAL        9.75          5.71       9.36          53.36        21.82     100.00

% OF TOTAL        9.75          5.71       9.36          53.36        21.82     100.00       0.00     100.00
    W/TAX




        IN SUMMARY:

            DURING THE PAST  6 YEARS. $    433557. TOTAL COST IN 1975 DOLLARS PRODUCED

                290. MG WATER FOR AN AVERAGE COST OF $   1496./ MG (1975 DOLLARS)




                                                                                           PAGE 18
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APPENDIX C

This Appendix contains small water utilities printouts for Region VI water systems. If explanantion of a data element is required, refer to Appendix A.

U. S. ENVIRONMENTAL PROTECTION AGENCY
WATER SUPPLY COST STUDY
EPA CONTRACT 68-03-2071
FOR
CITY OF BELTON
6-5-001
5/10/76

EPA PROJECT OFFICER

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214-749-1962

CITY OF BELTON
SYSTEM FACTS
1975

POPULATION - SMSA	220757
COUNTY	172757
CITY OR TOWN	9800
RETAIL SERVICE AREA	10653.
AREA OF RETAIL SERVICE AREA	6.98 SQ MI
NUMBER OF METERS	3289.
NUMBER OF ACCOUNTS	3329.
NUMBER OF FLAT RATE ACCOUNTS	40.
PURCHASED WATER - RAW	0 MG
TREATED	427.885 MG
SOURCE WATER - GROUND	0.0 %
SURFACE	100.0 %
PIPE IN SYSTEM	--
ELEVATIONS - INTAKES	700 FT
TREATMENT PLANTS	NONE
SERVICE AREA MIN.	500 FT
SERVICE AREA MAX.	650 FT
REVENUE PRODUCING WATER	357.6910 MG
TREATED WATER	427.9850 MG
MAX. DAY	--
MAX. HOUR	--
FISCAL YEAR	5/31
IMPLEMENTATION DATE	5/10/76
PROCESSING DATE	6/ 1/76

6-5-001
5/10/76

CITY OF BELTON

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	24947.	23173.	24614.	25579.	34338.	31979.
ACQUISITION	--	--	--	--	32493.	79997.	98753.	107456.	106684.	113327.
TREATMENT	--	--	--	--	769.	546.	56.	12.	334.	463.
DISTRIBUTION	--	--	--	--	44292.	87198.	146456.	82211.	79149.	113327.
TOTAL	--	--	--	--	102501.	190913.	269885.	215258.	220505.	259095.
COST/MG										
SUPPORT SERVICES	--	--	--	--	91.	76.	85.	84.	115.	89.
ACQUISITION	--	--	--	--	119.	263.	341.	351.	357.	317.
TREATMENT	--	--	--	--	3.	2.	0.	0.	1.	1.
DISTRIBUTION	--	--	--	--	162.	287.	506.	268.	265.	317.
TOTAL	--	--	--	--	375.	627.	933.	703.	737.	724.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	24.34	12.14	9.12	11.88	15.57	12.34
ACQUISITION	--	--	--	--	31.70	41.90	36.59	49.92	48.38	43.74
TREATMENT	--	--	--	--	0.75	0.29	0.02	0.01	0.15	0.18
DISTRIBUTION	--	--	--	--	43.21	45.67	54.27	38.19	35.89	43.74
TOTAL	--	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00

CITY OF BELTON

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	15.9

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	769.	546.	56.	12.	334.	463.
TREATED WATER	--	--	--	--	--	--	--	--	--	428.
BILLED MG	--	--	--	--	273.	304.	269.	306.	299.	358.
$/MG TREATED	--	--	--	--	--	--	--	--	--	1.
$/MG BILLED	--	--	--	--	3.	2.	0.	0.	1.	1.

```
                                   CITY OF BELTON

                         RAW/TREATED WATER QUALITY INFORMATION

                      (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

*****************************************************************************************************
*       CONSTITUENT        *           RAW                 / /     *          TREATED        02/11/75   *
*                          *     MIN.         MAX.         TEST    *     MIN.         MAX.     TEST     *
*****************************************************************************************************

   SELENIUM                                                                                    2.2

   FLUORIDE                                                                                    0.70

   CHLORIDE                                                                                    28.0

   SULPHATE                                                                                    20.0
```

6-5-001
5/10/76

CITY OF BELTON

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	--	48775.	38951.	31872.	41895.	45084.	51124.
MAN HOURS	--	--	--	--	20862.	20852.	20862.	20862.	20862.	20862.
MG BILLED CONSUMPTION	--	--	--	--	273.	304.	289.	306.	299.	359.
$/MG	--	--	--	--	179.	128.	110.	137.	151.	143.
MH/MG	--	--	--	--	76.	69.	72.	68.	70.	58.
$/MH	--	--	--	--	2.34	1.87	1.53	2.01	2.16	2.45

6-5-001
5/10/76

CITY OF BELTON

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	--	--	--	0.	0.	0.	0.	0.	0.
K W H	--	--	--	--	0.	0.	0.	0.	0.	0.
$/MG	--	--	--	--	0.	0.	0.	0.	0.	0.
K W H/MG	--	--	--	--	0.	0.	0.	0.	0.	0.

CITY OF BELTON

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	--	--	--	--	737.	737.	737.	737.	737.	737.
ACQUISITION	--	--	--	--	0.	0.	0.	0.	0.	0.
TREATMENT	--	--	--	--	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	--	--	--	6633.	6633.	6633.	6633.	6633.	6633.
TOTAL	--	--	--	--	7370.	7370.	7370.	7370.	7370.	7370.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	--	--	--	--	3.	2.	3.	2.	2.	2.
ACQUISITION	--	--	--	--	0.	0.	0.	0.	0.	0.
TREATMENT	--	--	--	--	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	--	--	--	24.	22.	23.	22.	22.	19.
TOTAL	--	--	--	--	27.	24.	25.	24.	25.	21.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	--	--	--	--	10.00	10.00	10.00	10.00	10.00	10.00
ACQUISITION	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00
TREATMENT	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00
DISTRIBUTION	--	--	--	--	90.00	90.00	90.00	90.00	90.00	90.00
TOTAL	--	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	--	--	--	--	13515.	13207.	12900.	12575.	12232.	11890.
INTEREST $/MG	--	--	--	--	49.	43.	45.	41.	41.	33.

CITY OF BELTON

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	--	102501.	190913.	269885.	215258.	220505.	259095.
DEPRECIATION	--	--	--	--	7370.	7370.	7370.	7370.	7370.	7370.
INTEREST	--	--	--	--	13515.	13207.	12900.	12575.	12232.	11893.
TOTAL	--	--	--	--	123386.	211491.	290155.	235203.	240108.	278358.
$/MG	--	--	--	--	452.	695.	1003.	768.	803.	774.
$/MG 1975 DOLLARS	--	--	--	--	628.	924.	1294.	929.	875.	778.
SPECIAL TAXES	--	--	--	--	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	--	83.07	90.27	93.01	91.52	91.84	93.08

```
                                                                                                  6-5-001

                                                                                                  5/10/76
                                              CITY OF BELTON

                                           COST SUMMARY FOR 1975

***************************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
***************************************************************************************************************


$/MG               91.         317.         1.         335.         33.      778.        0.        778.

% OF TOTAL       11.75        40.71       0.17        43.10        4.27    100.00

% OF TOTAL       11.75        40.71       0.17        43.10        4.27    100.00      0.00      100.00
    W/TAX




          IN SUMMARY:

               DURING THE PAST  6 YEARS, $   1651757. TOTAL COST IN 1975 DOLLARS PRODUCED

                  1830. MG WATER FOR AN AVERAGE COST OF $    903./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF GEORGETOWN

6-5-002

5/11/76

EPA PROJECT OFFICER

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US EPA
SUITE 1100
1600 PATTERSON
DALLAS, TEXAS 75201
214-749-1962

```
                         CITY OF GEORGETOWN
                            SYSTEM FACTS
                                1975
POPULATION - SMSA                                    N.A.
             COUNTY                                 44000
             CITY OR TOWN                           8300
             RETAIL SERVICE AREA                   10000.
AREA OF RETAIL SERVICE AREA                           6.02 SQ MI
NUMBER OF METERS                                   2829.
NUMBER OF ACCOUNTS                                 2829.
NUMBER OF FLAT RATE ACCOUNTS                          0.
PURCHASED WATER - RAW                                 0 MG
                  TREATED                             0 MG
SOURCE WATER - GROUND                             100.0 %
               SURFACE                              0.0 %
PIPE IN SYSTEM                                       42 MI
ELEVATIONS - INTAKES                                 --
             TREATMENT PLANTS                       740 FT
             SERVICE AREA MIN.                      680 FT
             SERVICE AREA MAX.                      800 FT
REVENUE PRODUCING WATER                         313.5680 MG
TREATED WATER                                   589.7970 MG
MAX. DAY                                            3.74 MG
MAX. HOUR                                           N.A.
FISCAL YEAR                                         8/31
IMPLEMENTATION DATE                              5/11/76
PROCESSING DATE                                  6/ 1/76
```

6-5-002

5/11/76

CITY OF GEORGETOWN

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	13723.	16412.	18673.	19508.	28534.	27316.	31274.	36998.
ACQUISITION	--	--	3009.	2250.	2772.	2772.	3752.	4295.	4105.	4377.
TREATMENT	--	--	2407.	1800.	2217.	2217.	3002.	3436.	3284.	3501.
DISTRIBUTION	--	--	54758.	40949.	50444.	50444.	68295.	78165.	74717.	79655.
TOTAL	--	--	73896.	61411.	74106.	74942.	103584.	113212.	113381.	124531.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	42.	78.	79.	83.	118.
ACQUISITION	--	--	--	--	--	6.	10.	12.	11.	14.
TREATMENT	--	--	--	--	--	5.	6.	10.	9.	11.
DISTRIBUTION	--	--	--	--	--	109.	187.	226.	199.	254.
TOTAL	--	--	--	--	--	162.	283.	327.	302.	397.
% OF TOTAL										
SUPPORT SERVICES	--	--	18.57	26.73	25.20	26.03	27.55	24.13	27.58	29.71
ACQUISITION	--	--	4.07	3.66	3.74	3.70	3.62	3.79	3.62	3.51
TREATMENT	--	--	3.26	2.93	2.99	2.96	2.90	3.03	2.90	2.91
DISTRIBUTION	--	--	74.10	66.68	68.07	67.31	65.93	69.04	65.90	63.96
TOTAL	--	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

CITY OF GEORGETOWN

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	17.1

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	--	--	--	--	--	--	--
TREATED WATER	--	--	--	--	--	552.	567.	553.	553.	590.
BILLED MG	--	--	--	--	--	462.	366.	346.	375.	314.
$/MG TREATED	--	--	--	--	--	--	--	--	--	--
$/MG BILLED	--	--	--	--	--	--	--	--	--	--

```
                                   CITY OF GEORGETOWN

                           RAW/TREATED WATER QUALITY INFORMATION

                          (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

***********************************************************************************************
*      CONSTITUENT          *              RAW              / /    *        TREATED       12/29/75  *
*                           *      MIN.          MAX.       TEST   *    MIN.        MAX.     TEST   *
***********************************************************************************************

  NITRATE (N)                                                                              27.0

  FLUORIDE                                                                                  0.2

  IRON                                                                                      0.02

  MANGANESE                                                                                <0.05

  SULPHATE                                                                                 19.0
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6-5-002
5/11/76

CITY OF GEORGETOWN

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL	--	--	--	--	--	34170.	36501.	35275.	31674.	45430.
MAN HOURS	--	--	--	--	--	16640.	16640.	16640.	16640.	16640.
MG BILLED CONSUMPTION	--	--	--	--	--	462.	366.	345.	375.	314.
$/MG	--	--	--	--	--	74.	100.	102.	84.	145.
MH/MG	--	--	--	--	--	36.	45.	48.	44.	53.
$/MH	--	--	--	--	--	2.05	2.19	2.12	1.90	2.73

6-5-002
5/11/75

CITY OF GEORGETOWN
10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	--	--	--	--	--	--	--	982.	1540.
K W H	--	--	--	--	--	--	--	--	1438371.	835691.
$/MG	--	--	--	--	--	--	--	--	3.	5.
K W H/MG	--	--	--	--	--	--	--	--	3836.	2655.

CITY OF GEORGETOWN

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
					DEPRECIATION COST $					
SUPPORT SERVICES	--	--	1700.	1704.	1580.	1460.	1340.	1361.	1380.	1400.
ACQUISITION	--	--	850.	852.	790.	730.	670.	681.	690.	700.
TREATMENT	--	--	680.	681.	632.	584.	536.	544.	552.	560.
DISTRIBUTION	--	--	13770.	13800.	12799.	11826.	10854.	11025.	11178.	11341.
TOTAL	--	--	17000.	17037.	15801.	14600.	13400.	13611.	13800.	14001.
					DEPRECIATION COST $/MG					
SUPPORT SERVICES	--	--	--	--	--	3.	4.	4.	4.	4.
ACQUISITION	--	--	--	--	--	2.	2.	2.	2.	2.
TREATMENT	--	--	--	--	--	1.	1.	2.	1.	2.
DISTRIBUTION	--	--	--	--	--	26.	30.	32.	30.	35.
TOTAL	--	--	--	--	--	32.	37.	39.	37.	45.
					DEPRECIATION COST % OF TOTAL					
SUPPORT SERVICES	--	--	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
ACQUISITION	--	--	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
TREATMENT	--	--	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
DISTRIBUTION	--	--	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00
TOTAL	--	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					INTEREST COST $					
INTEREST $	--	--	6100.	5994.	12090.	18197.	18000.	17448.	16897.	18210.
INTEREST $/MG	--	--	--	--	--	39.	49.	50.	45.	58.

CITY OF GEORGETOWN

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	73896.	61411.	74106.	74942.	103584.	113212.	113381.	124531.
DEPRECIATION	--	--	17000.	17037.	15801.	14500.	13400.	13611.	13800.	14001.
INTEREST	--	--	6100.	5994.	12090.	18187.	18000.	17448.	16897.	18210.
TOTAL	--	--	96996.	84442.	101998.	107729.	134984.	144271.	144078.	156742.
$/MG	--	--	--	--	--	233.	369.	416.	384.	500.
$/MG 1975 DOLLARS	--	--	--	--	--	310.	476.	504.	419.	500.
SPECIAL TAXES	--	--	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	--	--	69.57	76.74	78.47	78.69	79.45

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                                   CITY OF GEORGETOWN

                                  COST SUMMARY FOR 1975

*****************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*****************************************************************************************************

$/MG              122.          16.         13.          290.         58.       500.        0.        530.

% OF TOTAL        24.50         3.24        2.59         58.05        11.62     100.00

% OF TOTAL        24.50         3.24        2.59         58.05        11.62     100.00      0.00      100.00
    W/TAX




          IN SUMMARY:

                DURING THE PAST  5 YEARS, $    805763. TOTAL COST IN 1975 DOLLARS PRODUCED

                     1862. MG WATER FOR AN AVERAGE COST OF $    433./ MG (1975 DOLLARS)
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF TAYLOR

6-5-003

5/12/76

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214-749-1962

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                                                                        6-5-003
                                                                        5/12/76
                         CITY OF TAYLOR
                          SYSTEM FACTS
                              1975
POPULATION - SMSA                                      N.A.
             COUNTY                                    39000
             CITY OR TOWN                              9515
             RETAIL SERVICE AREA                       9616.
AREA OF RETAIL SERVICE AREA                              10.24 SQ MI
NUMBER OF METERS                                       3542.
NUMBER OF ACCOUNTS                                     3542.
NUMBER OF FLAT RATE ACCOUNTS                              0.
PURCHASED WATER - RAW                                     0 MG
                  TREATED                                 0 MG
SOURCE WATER - GROUND                                  100.0 %
               SURFACE                                   0.0 %
PIPE IN SYSTEM                                         N.A.
ELEVATIONS - INTAKES                                    565 FT
             TREATMENT PLANTS                           530 FT
             SERVICE AREA MIN.                          500 FT
             SERVICE AREA MAX.                          620 FT
REVENUE PRODUCING WATER                                285.6820 MG
TREATED WATER                                          393.2790 MG
MAX. DAY                                              2.629 MG
MAX. HOUR                                              N.A.
FISCAL YEAR                                            9/30
IMPLEMENTATION DATE                                   5/12/76
PROCESSING DATE                                       6/ 2/76


                                                                        PAGE  2
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CITY OF TAYLOR

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	28262.	27082.	31156.	30754.	42800.	42476.	34205.	40299.	35401.	41644.
ACQUISITION	12247.	11736.	13501.	13327.	18547.	18406.	14822.	17463.	15340.	18046.
TREATMENT	3768.	3611.	4154.	4101.	5707.	5664.	4561.	5373.	4720.	5553.
DISTRIBUTION	49930.	47845.	55043.	54332.	75614.	75041.	60428.	71194.	62542.	73571.
TOTAL	94208.	90274.	103854.	102513.	142668.	141588.	114015.	134329.	118003.	138814.
COST/MG										
SUPPORT SERVICES	152.	122.	176.	123.	154.	142.	120.	95.	128.	146.
ACQUISITION	66.	53.	76.	53.	67.	62.	52.	41.	55.	63.
TREATMENT	20.	16.	23.	16.	21.	19.	16.	13.	17.	19.
DISTRIBUTION	268.	215.	311.	217.	272.	251.	212.	168.	226.	258.
TOTAL	506.	406.	586.	409.	513.	474.	400.	317.	427.	486.
% OF TOTAL										
SUPPORT SERVICES	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.0
ACQUISITION	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.0
TREATMENT	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.0
DISTRIBUTION	53.00	53.00	53.00	53.00	53.00	53.00	53.00	53.00	53.00	53.0
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0

CITY OF TAYLOR

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	55.7

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	2448.	2254.	2314.	3350.	4170.	3646.	4209.	3301.	5045.	5226.
TREATED WATER	--	--	--	--	--	--	--	--	--	393.
BILLED MG	186.	222.	177.	251.	278.	299.	285.	423.	277.	286.
$/MG TREATED	--	--	--	--	--	--	--	--	--	13.
$/MG BILLED	13.	10.	13.	13.	15.	12.	15.	8.	18.	18.

CITY OF TAYLOR

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	12/--/75 TEST	TREATED MIN.	TREATED MAX.	12/--/75 TEST
NITRATE (N)			<.04			<.04
FLUORIDE			2.8			3.0
SULPHATE			222			255

6-5-003

5/12/76

CITY OF TAYLOR

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	51802.	49772.	52153.	54157.	66861.	61688.	63632.	67463.	71429.	74863.
MAN HOURS	29640.	29640.	29640.	29640.	29640.	29640.	29640.	29640.	29640.	29640.
MG BILLED CONSUMPTION	186.	222.	177.	251.	278.	299.	285.	423.	277.	286.
$/MG	278.	224.	294.	216.	240.	207.	223.	159.	258.	262.
MH/MG	159.	133.	167.	118.	107.	99.	104.	70.	107.	104.
$/MH	1.75	1.68	1.76	1.83	2.26	2.08	2.15	2.28	2.41	2.53

6-5-003
5/12/76

CITY OF TAYLOR

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	6446.	2281.	6971.	6776.	8456.	8496.	7820.	8591.	10997.	13294.
K W H	--	--	--	--	--	44600.	43760.	44340.	42360.	39520.
$/MG	35.	10.	39.	27.	30.	28.	27.	20.	40.	47.
K W H/MG	--	--	--	--	--	149.	153.	105.	153.	138.

6-5-003

5/12/76

CITY OF TAYLOR

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	1850.	1950.	2050.	2150.	2250.	2350.	2950.	3050.	3150.	3250.
ACQUISITION	5550.	5850.	6150.	6450.	6750.	7050.	8850.	9150.	9450.	9750.
TREATMENT	1850.	1950.	2050.	2150.	2250.	2350.	2950.	3050.	3150.	3250.
DISTRIBUTION	27750.	29250.	30750.	32250.	33750.	35250.	44250.	45750.	47250.	48750.
TOTAL	37000.	39000.	41000.	43000.	45000.	47000.	59000.	61000.	63000.	65000.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	10.	9.	12.	9.	8.	8.	10.	7.	11.	11.
ACQUISITION	30.	26.	35.	26.	24.	24.	31.	22.	34.	34.
TREATMENT	10.	9.	12.	9.	8.	8.	10.	7.	11.	11.
DISTRIBUTION	149.	132.	174.	129.	121.	118.	155.	108.	171.	171.
TOTAL	199.	175.	231.	171.	162.	157	207.	144.	228.	228.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ACQUISITION	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
TREATMENT	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DISTRIBUTION	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	8632.	7915.	7250.	6719.	5632.	3377.	30450.	27211.	27544.	27192.
INTEREST $/MG	46.	36.	41.	27.	20.	11.	107.	64.	100.	95.

CITY OF TAYLOR

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	94208.	90274.	103854.	102513.	142668.	141588.	114015.	134329.	118003.	138814.
DEPRECIATION	37000.	39000.	41000.	43000.	45000.	47000.	59000.	61000.	63000.	65000.
INTEREST	8632.	7915.	7250.	6719.	5632.	3377.	30450.	27211.	27544.	27192.
TOTAL	139839.	137189.	152104.	152232.	193300.	191965.	203465.	222540.	208547.	231006.
$/MG	751.	617.	858.	607.	695.	643.	714.	526.	754.	809.
$/MG 1975 DOLLARS	1246.	994.	1331.	892.	966.	855.	921.	636.	822.	809.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	67.37	65.80	68.28	67.34	73.81	73.76	56.04	60.36	56.58	60.09

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                                                                                                      6-5-003
                                                                                                      5/12/76
                                        CITY OF TAYLOR
                                     COST SUMMARY FOR 1975
*****************************************************************************************************
*          *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *   TAXES   * TOTAL W/TAX *
*****************************************************************************************************

$/MG               157.          97.          31.          428.          95.        809.        0.        809.

% OF TOTAL        19.43         12.03         3.81         52.95        11.77      100.00

% OF TOTAL        19.43         12.03         3.81         52.95        11.77      100.00       0.00      100.00
   W/TAX




        IN SUMMARY:
              DURING THE PAST 10 YEARS, $   2426616. TOTAL COST IN 1975 DOLLARS PRODUCED
                   2684. MG WATER FOR AN AVERAGE COST OF $    904./ MG (1975 DOLLARS)




                                                                                                     PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

BELL CO WCID#1

6-5-004

5/13/76

EPA PROJECT OFFICER

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WATER SUPPLY OFFICE
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SUITE 1100
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DALLAS, TEXAS 75201
214-749-1962

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                                                                         6-5-004
                                                                         5/13/76
                              BELL CO WCID#1
                               SYSTEM FACTS
                                   1975
POPULATION - SMSA                                         220757
             COUNTY                                       172757
             CITY OR TOWN                                   NONE
             RETAIL SERVICE AREA                              0.
AREA OF RETAIL SERVICE AREA                                   0.00 SQ MI
NUMBER OF METERS                                             42.
NUMBER OF ACCOUNTS                                           42.
NUMBER OF FLAT RATE ACCOUNTS                                  0.
PURCHASED WATER - RAW                                   580.06 MG
                  TREATED                                    0 MG
SOURCE WATER - GROUND                                       0.0 %
               SURFACE                                    100.0 %
PIPE IN SYSTEM                                               17 MI
ELEVATIONS - INTAKES                                        600 FT
             TREATMENT PLANTS                               735 FT
             SERVICE AREA MIN.                              735 FT
             SERVICE AREA MAX.                              880 FT
REVENUE PRODUCING WATER                                 5578.9040 MG
TREATED WATER                                           5802.0600 MG
MAX. DAY                                                   26.9 MG
MAX. HOUR                                                  28.5 MG
FISCAL YEAR                                                6/30
IMPLEMENTATION DATE                                     5/13/76
PROCESSING DATE                                         6/ 1/76

                                                                         PAGE  2
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6-5-004
5/13/76

BELL CO WCID#1

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	33915.	40419.	50051.	77728.	61382.
ACQUISITION	--	--	--	--	--	82465.	91823.	99889.	113547.	139260.
TREATMENT	--	--	--	--	--	99935.	96069.	95089.	111025.	117565.
DISTRIBUTION	--	--	--	--	--	142280.	149739.	160001.	193244.	245529.
TOTAL	276084.	320558.	361509.	260650.	321275.	358596.	378050.	405030.	495544.	563735.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	8.	8.	10.	15.	11.
ACQUISITION	--	--	--	--	--	20.	19.	20.	22.	25.
TREATMENT	--	--	--	--	--	24.	20.	19.	21.	21.
DISTRIBUTION	--	--	--	--	--	34.	31.	32.	37.	44.
TOTAL	88.	104.	104.	68.	92.	85.	79.	81.	95.	101.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	9.45	10.69	12.36	15.69	10.89
ACQUISITION	--	--	--	--	--	23.00	24.29	24.66	22.91	24.70
TREATMENT	--	--	--	--	--	27.87	25.41	23.48	22.40	20.85
DISTRIBUTION	--	--	--	--	--	39.68	39.61	39.50	39.00	43.55
TOTAL	--	--	--	--	--	100.00	100.00	100.00	100.00	100.00

BELL CO WCID#1

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
SEDIMENTATION	100.%
COAGULATION	100.%
FILTRATION	100.%
CHLORINATION	100.%
FLUORIDATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	37.9
FLUORIDE	8.0

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	29522.	22014.	21993.	18721.	22423.	25243.	21868.	18972.	23480.	25479.
TREATED WATER	3245.	3209.	3629.	3979.	3634.	4366.	4973.	5220.	5428.	5832.
BILLED MG	3120.	3085.	3489.	3826.	3495.	4198.	4782.	5019.	5220.	5579.
$/MG TREATED	9.	7.	6.	5.	6.	6.	4.	4.	4.	4.
$/MG BILLED	9.	7.	6.	5.	6.	6.	5.	4.	4.	5.

```
                                                                                      6-5-004

                                                                                      5/13/76

                                         BELL CO WCID#1

                             RAW/TREATED WATER QUALITY INFORMATION

                           (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

****************************************************************************************
*        CONSTITUENT       *          RAW          12/--/75 *      TREATED       12/--/75  *
*                          *    MIN.       MAX.      TEST   *  MIN.       MAX.     TEST    *
****************************************************************************************

   NITRATE (N)                                        1.5                           2.3

   FLUORIDE                                           0.3                           1.0

   CHLORIDE                                          25.0                          29.0

   IRON                                              <.06                          <.02

   SULPHATE                                          22.0                          22.0




                                                                                      PAGE 8
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6-5-004
5/13/75

BELL CO WCID#1

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	56404.	62473.	62435.	63699.	68244.	75148.	68722.	75975.	87858.	97131.
MAN HOURS	16640.	16640.	16640.	16640.	18928.	18928.	18928.	18928.	18928.	18928.
MG BILLED CONSUMPTION	3120.	3085.	3489.	3826.	3495.	4198.	4782.	5019.	5220.	5579.
$/MG	18.	20.	18.	17.	20.	18.	14.	15.	17.	17.
MH/MG	5.	5.	5.	4.	5.	5.	4.	4.	4.	3.
$/MH	3.39	3.75	3.75	3.83	3.61	3.97	3.63	4.01	4.64	5.13

```
                                                                                   6-5-004
                                                                                   5/13/76
                                        BELL CO WCID#1
                                  10-YEAR POWER COST ANALYSIS

*****************************************************************************************
*                        1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
*****************************************************************************************

POWER $                 65799.    84145.   101698.    77168.   104238.   126846.   131597.   150340.   178317.   254538.

K W H                      --        --        --        --        --        --        --        --        --        --

$/MG                      21.       27.       29.       20.       30.       30.       28.       30.       34.       45.

K W H/MG                   --        --        --        --        --        --        --        --        --        --




                                                                                   PAGE 12
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                                                                                                   6-5-004
                                                                                                   5/13/76
                                                         BELL CO WCID#1
                                                 10-YEAR DEPRECIATION ALLOCATION
**********************************************************************************************************
*                               1966      1967      1968      1969      1970      1971      1972      1973      1974      1975  *
**********************************************************************************************************
                                                       DEPRECIATION COST $
                                                       -------------------

SUPPURT SERVICES                527.     3800.     3770.     3770.     3666.     4075.     4335.     4335.     4335.     4335.
ACQUISITION                    1791.    12921.    12818.    12818.    12465.    13855.    14739.    14739.    14739.    14739.
TREATMENT                      4110.    29643.    29405.    29405.    28597.    31785.    33813.    33813.    33813.    33813.
DISTRIBUTION                   4110.    29643.    29405.    29405.    28597.    31785.    33813.    33813.    33813.    33813.
  TOTAL                       10538.    76008.    75397.    75397.    73325.    81501.    86700.    86700.    86700.    86700.
                                                     DEPRECIATION COST $/MG
                                                     ----------------------

SUPPORT SERVICES                  0.        1.        1.        1.        1.        1.        1.        1.        1.        1.
ACQUISITION                       1.        4.        4.        3.        4.        3.        3.        3.        3.        3.
TREATMENT                         1.       10.        8.        8.        8.        8.        7.        7.        6.        5.
DISTRIBUTION                      1.       10.        8.        8.        8.        8.        7.        7.        6.        5.
  TOTAL                           3.       25.       22.       20.       21.       19.       18.       17.       17.       16.
                                                 DEPRECIATION COST % OF TOTAL
                                                 ----------------------------

SUPPORT SERVICES                5.00      5.00      5.00      5.00      5.00      5.00      5.00      5.00      5.00      5.00
ACQUISITION                    17.00     17.00     17.00     17.00     17.00     17.00     17.00     17.00     17.00     17.00
TREATMENT                      39.00     39.00     39.00     39.00     39.00     39.00     39.00     39.00     39.00     39.00
DISTRIBUTION                   39.00     39.00     39.00     39.00     39.00     39.00     39.00     39.00     39.00     39.00
  TOTAL                       100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00
                                                       INTEREST COST $
                                                       ---------------

INTEREST $                    15232.   153920.   150134.   147573.   145692.   150685.   140248.   135739.   132462.   124025.
INTEREST $/MG                     5.       50.       43.       39.       42.       36.       29.       27.       25.       22.

                                                                                                   PAGE 14
                                                                                                   6-5-004

                                                                                                   5/13/75

                                                         BELL CO WCID#1

                                           10-YEAR CAPITAL AND OPERATING COST ANALYSIS

****************************************************************************************************************
*                           1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
****************************************************************************************************************

O & M                    276084.   320558.   361509.   260650.   321275.   358596.   378050.   405030.   495544.   563736.

DEPRECIATION              10538.    76008.    75397.    75397.    73325.    81501.    86700.    86700.    86700.    86700.

INTEREST                  15232.   153920.   150134.   147573.   145692.   150685.   140248.   135739.   132462.   124025.


TOTAL                    301854.   550486.   587040.   483620.   540293.   590781.   604999.   627468.   714706.   774460.

$/MG                         97.      178.      168.      126.      155.      141.      127.      125.      137.      139.

$/MG 1975 DOLLARS           161.      287.      261.      186.      215.      187.      163.      151.      149.      139.

SPECIAL TAXES                 0.        0.        0.        0.        0.        0.        0.        0.        0.        0.

O & M % OF TOTAL           91.46     58.23     61.58     53.90     59.46     60.70     62.49     64.55     69.34     72.79




                                                                                                   PAGE 16
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                                                                                              6-5-004
                                                                                              5/13/76
                                                   BELL CO WCID#1
                                                COST SUMMARY FOR 1975
*****************************************************************************************************
*           *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*****************************************************************************************************

$/MG                  12.          28.         27.          50.          22.       139.        0.        139.

% OF TOTAL            8.49        19.88       19.55        36.07        16.01     100.00

% OF TOTAL            8.49        19.88       19.55        36.07        16.01     100.00       0.00      100.00
    W/TAX



            IN SUMMARY:
                  DURING THE PAST 10 YEARS, $    7638113. TOTAL COST IN 1975 DOLLARS PRODUCED
                       41813. MG WATER FOR AN AVERAGE COST OF $     183./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF KILLEEN

6-5-005

5/14/76

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1630 PATTERSON
DALLAS, TEXAS 75201
214-749-1967

CITY OF KILLEEN
SYSTEM FACTS
1975

POPULATION - SMSA	220757
COUNTY	172757
CITY OR TOWN	45359
RETAIL SERVICE AREA	40357.
AREA OF RETAIL SERVICE AREA	2.80 SQ MI
NUMBER OF METERS	11025.
NUMBER OF ACCOUNTS	11025.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	1826.10 MG
SOURCE WATER - GROUND	0.0 %
SURFACE	100.0 %
PIPE IN SYSTEM	128 MI
ELEVATIONS - INTAKES	--
TREATMENT PLANTS	--
SERVICE AREA MIN.	1025 FT
SERVICE AREA MAX.	925 FT
REVENUE PRODUCING WATER	1601.0390 MG
TREATED WATER	1826.0980 MG
MAX. DAY	8.426 MG
MAX. HOUR	N.A.
FISCAL YEAR	9/31
IMPLEMENTATION DATE	5/14/76
PROCESSING DATE	6/ 1/76

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                                                                                                   6-5-005
                                                                                                   5/14/76
                                          CITY OF KILLEEN
                                  10-YEAR KEY  O & M COST ANALYSIS

***************************************************************************************************
*                       1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
***************************************************************************************************

                                            COST/YEAR
                                            ---------

SUPPORT SERVICES         --      29953.    38483.    51401.    70422.    67677.    67319.    69976.    80434.    91933.
ACQUISITION              --     206890.   222829.   259097.   268679.   297161.   290786.   255650.   263920.   289157.
TREATMENT                --       1736.     1429.     1899.     1713.     2362.     1957.     2086.      922.     1663.
DISTRIBUTION             --     156563.   136913.   200777.   163387.   212669.   201358.   236118.   285888.   296934.
  TOTAL                  --     395141.   399655.   513173.   504201.   579869.   561421.   563831.   631165.   679694.

                                            COST/MG
                                            -------

SUPPORT SERVICES         --         31.       39.       43.       59.       49.       46.       47.       48.       57.
ACQUISITION              --        214.      224.      219.      226.      215.      208.      172.      159.      181.
TREATMENT                --          2.        1.        2.        1.        2.        1.        1.        1.        1.
DISTRIBUTION             --        162.      138.      170.      137.      154.      144.      159.      172.      185.
  TOTAL                  --        409.      401.      433.      423.      419.      401.      379.      380.      425.

                                            % OF TOTAL
                                            ----------

SUPPORT SERVICES         --        7.58      9.63     10.02     13.97     11.67     11.99     12.41     12.74     13.53
ACQUISITION              --       52.36     55.76     50.49     53.29     51.25     51.79     45.34     41.81     42.56
TREATMENT                --        0.44      0.36      0.37      0.34      0.41      0.35      0.37      0.15      0.24
DISTRIBUTION             --       39.62     34.26     39.12     32.41     36.68     35.87     41.88     45.30     43.59
  TOTAL                  --      100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00    100.00
```

CITY OF KILLEEN

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	5.3

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	1736.	1429.	1899.	1713.	2362.	1957.	2086.	922.	1650.
TREATED WATER	--	1061.	1094.	1302.	1310.	1521.	1540.	1636.	1804.	1825.
BILLED MG	--	966.	995.	1164.	1191.	1353.	1401.	1499.	1560.	1601.
$/MG TREATED	--	2.	1.	1.	1.	2.	1.	1.	1.	1.
$/MG BILLED	--	2.	1.	2.	1.	2.	1.	1.	1.	1.

CITY OF KILLEEN

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	/ / TEST	TREATED MIN.	TREATED MAX.	06/25/75 TEST
NITRATE (N)						1.2
FLUORIDE						0.7
CHLORIDE						35.0
MANGANESE						<0.05
GROSS BETA						9.0+-1.8
GROSS ALPHA						<2

6-5-005

5/14/76

CITY OF KILLEEN

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	86370.	96630.	113861.	133338.	144034.	140580.	155240.	169374.	185563.
MAN HOURS	--	47840.	47840.	47840.	47840.	49920.	49920.	49920.	49920.	49920.
MG BILLED CONSUMPTION	--	966.	995.	1184.	1191.	1383.	1401.	1489.	1660.	1631.
$/MG	--	89.	97.	96.	112.	104.	100.	104.	102.	115.
MH/MG	--	50.	48.	40.	40.	36.	36.	34.	30.	31.
$/MH	--	1.81	2.02	2.38	2.79	2.89	2.82	3.11	3.39	3.72

```
                                                                                              6-5-005
                                                                                              5/14/76
                                              CITY OF KILLEEN
                                        10-YEAR POWER COST ANALYSIS

*****************************************************************************************************
*                                  1966     1967     1968     1969     1970     1971     1972     1973     1974     1975   *
*****************************************************************************************************

POWER $                              --     9836.   10225.   12920.   14828.   14487.   14081.   15586.   20963.   26256.

K W H                                --       --       --       --       --       --       --       --       --       --

$/MG                                 --      10.      10.      11.      12.      10.      10.      10.      13.      16.

K W H/MG                             --       --       --       --       --       --       --       --       --       --




                                                                                              PAGE 12
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6-5-005
5/14/76

CITY OF KILLEEN

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	--	4618.	4351.	4964.	4974.	5202.	5732.	6203.	5938.	7913.
ACQUISITION	--	0.	0.	0.	0.	0.	0.	0.	0.	0.
TREATMENT	--	0.	0.	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	41566.	39157.	44678.	44766.	46819.	51592.	55825.	53442.	71215.
TOTAL	--	46184.	43507.	49642.	49740.	52021.	57324.	62027.	59380.	79127.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	--	5.	4.	4.	4.	4.	4.	4.	4.	5.
ACQUISITION	--	0.	0.	0.	0.	0.	0.	0.	0.	0.
TREATMENT	--	0.	0.	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	43.	39.	38.	38.	34.	37.	37.	32.	44.
TOTAL	--	48.	44.	42.	42.	38.	41.	42.	36.	49.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	--	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
ACQUISITION	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TREATMENT	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISTRIBUTION	--	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
TOTAL	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	--	23693.	22980.	22249.	21499.	20704.	55880.	56851.	55171.	150365.
INTEREST $/MG	--	25.	23.	19.	18.	15.	40.	38.	33.	94.

6-5-005
5/14/76

CITY OF KILLEEN
10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	395141.	3996[illegible]	513173.	504201.	579869.	561421.	563831.	631165.	679684.
DEPRECIATION	--	46184.	43507.	49642.	49740.	52021.	57324.	62027.	59380.	79127.
INTEREST	--	23693.	22980.	22249.	21499.	20704.	55880.	56851.	55171.	150365.
TOTAL	--	465018.	466143.	585064.	575440.	652595.	674625.	682710.	745716.	909176.
$/MG	--	482.	468.	494.	483.	472.	482.	459.	449.	563.
$/MG 1975 DOLLARS	--	775.	726.	726.	671.	627.	621.	555.	490.	568.
SPECIAL TAXES	--	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	84.97	85.74	87.71	87.62	88.86	83.22	82.59	84.64	74.76

```
                                      CITY OF KILLEEN

                                  COST SUMMARY FOR 1975

**********************************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL    *  TAXES    * TOTAL W/TAX *
**********************************************************************************************************************


$/MG                 62.           181.          1.          230.           94.       568.         0.          568.

% OF TOTAL         10.98          31.80        0.18         40.49         16.54     100.00

% OF TOTAL         10.98          31.80        0.18         40.49         16.54     100.00        0.00       100.00
    W/TAX




     IN SUMMARY:

          DURING THE PAST  9 YEARS, $   7417405. TOTAL COST IN 1975 DOLLARS PRODUCED

              11871. MG WATER FOR AN AVERAGE COST OF $    625./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF DENTON

6-5-006

5/17/76

EPA PROJECT OFFICER

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214-749-1967

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                                                                      6-5-006
                                                                      5/17/76
                                CITY OF DENTON
                                 SYSTEM FACTS
                                     1975
POPULATION - SMSA                                   3400000
             COUNTY                                   95000
             CITY OR TOWN                             46800
             RETAIL SERVICE AREA                      46815.
AREA OF RETAIL SERVICE AREA                              32.30 SQ MI
NUMBER OF METERS                                      11591.
NUMBER OF ACCOUNTS                                    11591.
NUMBER OF FLAT RATE ACCOUNTS                              0.
PURCHASED WATER - RAW                               2737.68 MG
                  TREATED                                 0 MG
SOURCE WATER - GROUND                                   2.0 %
               SURFACE                                 98.0 %
PIPE IN SYSTEM                                          170 MI
ELEVATIONS - INTAKES                                    500 FT
             TREATMENT PLANTS                            --
             SERVICE AREA MIN.                          550 FT
             SERVICE AREA MAX.                          780 FT
REVENUE PRODUCING WATER                              2318.1360 MG
TREATED WATER                                        2641.2670 MG
MAX. DAY                                               18.5 MG
MAX. HOUR                                              18.5 MG
FISCAL YEAR                                             9/30
IMPLEMENTATION DATE                                  5/17/76
PROCESSING DATE                                      6/ 1/76

                                                                      PAGE  2
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6-5-006

5/17/76

CITY OF DENTON

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	55683.
ACQUISITION	--	--	--	--	--	--	--	--	--	100945.
TREATMENT	--	--	--	--	--	--	--	--	--	255353.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	191874.
TOTAL	280000.	293025.	310470.	341147.	383381.	443732.	456016.	435370.	557652.	603855.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	24.
ACQUISITION	--	--	--	--	--	--	--	--	--	44.
TREATMENT	--	--	--	--	--	--	--	--	--	110.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	83.
TOTAL	190.	174.	186.	179.	167.	183.	183.	181.	194.	260.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	9.22
ACQUISITION	--	--	--	--	--	--	--	--	--	16.72
TREATMENT	--	--	--	--	--	--	--	--	--	42.29
DISTRIBUTION	--	--	--	--	--	--	--	--	--	31.77
TOTAL	--	--	--	--	--	--	--	--	--	100.00

6-5-006

5/17/76

CITY OF DENTON

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
SEDIMENTATION	100.%
FILTRATION	100.%
CHLORINATION	100.%
ACTIVATED CARBON	20.%
FLUORIDATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	50.7
FLUORIDE	5.1
CARBON	24.4
LIME	179.3
IRON	180.7
CALGON	20.2
POLYMER	2.3

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	30184.	37467.	37834.	47052.	47335.	51314.	55934.	41256.	55453.	76183.
TREATED WATER	1507.	1717.	1704.	1940.	2341.	2479.	2547.	2447.	2490.	2641.
BILLED MG	1477.	1683.	1670.	1901.	2294.	2429.	2496.	2399.	2875.	2318.
$/MG TREATED	20.	22.	22.	24.	20.	21.	22.	17.	22.	29.
$/MG BILLED	20.	22.	23.	25.	21.	21.	22.	17.	19.	33.

CITY OF DENTON

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	RAW MAX.	12/08/75 TEST	TREATED MIN.	TREATED MAX.	12/08/75 TEST
NITRATE (N)			0.7			0.5
FLUORIDE			0.3			0.7
CHLORIDE			28			31
IRON			.30			.02
SULPHATE			32			40

CITY OF DENTON

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	105468.	124292.	165591.	179233.	213553.	228113.	198121.	215103.	281100.
MAN HOURS	59800.	59800.	59800.	61880.	63960.	66040.	68120.	70200.	70200.	72280.
MG BILLED CONSUMPTION	1477.	1683.	1670.	1901.	2294.	2429.	2496.	2399.	2875.	2318.
$/MG	--	63.	74.	87.	78.	88.	91.	83.	75.	121.
MH/MG	40.	36.	36.	33.	28.	27.	27.	29.	24.	31.
$/MH	--	1.76	2.08	2.68	2.80	3.23	3.35	2.82	3.06	3.89

6-5-005
5/17/76

CITY OF DENTON

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	35044.	41327.	38817.	47699.	50884.	56736.	57383.	56188.	62892.	55173.
K W H	--	--	--	--	--	--	--	--	--	--
$/MG	24.	25.	23.	25.	22.	23.	23.	23.	22.	23.
K W H/MG	--	--	--	--	--	--	--	--	--	--

CITY OF DENTON

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
				DEPRECIATION COST $						
SUPPORT SERVICES	18822.	19939.	13299.	13306.	14271.	14218.	16864.	18217.	21909.	26350.
ACQUISITION	4183.	4431.	2955.	2957.	3171.	3160.	3748.	4048.	4869.	5856.
TREATMENT	46009.	48740.	32509.	32525.	34884.	34756.	41224.	44531.	53555.	64412.
DISTRIBUTION	140118.	148436.	99005.	99052.	106237.	105849.	125547.	135618.	163099.	196164.
TOTAL	209132.	221547.	147768.	147839.	158562.	157983.	187383.	202415.	243431.	292782.
				DEPRECIATION COST $/MG						
SUPPORT SERVICES	13.	12.	8.	7.	6.	6.	7.	8.	8.	11.
ACQUISITION	3.	3.	2.	2.	1.	1.	2.	2.	2.	3.
TREATMENT	31.	29.	19.	17.	15.	14.	17.	19.	19.	28.
DISTRIBUTION	95.	88.	59.	52.	46.	44.	50.	57.	57.	85.
TOTAL	142.	132.	88.	78.	69.	65.	75.	84.	85.	125.
				DEPRECIATION COST % OF TOTAL						
SUPPORT SERVICES	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
ACQUISITION	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
TREATMENT	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
DISTRIBUTION	67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00	67.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
				INTEREST COST $						
INTEREST $	66209.	69623.	68017.	68017.	90666.	86809.	80418.	122633.	133124.	204220.
INTEREST $/MG	45.	41.	41.	36.	40.	36.	32.	51.	46.	88.

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5/17/76

CITY OF DENTON

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	280000.	293025.	310470.	341147.	383381.	443732.	456016.	435370.	557652.	603855.
DEPRECIATION	209132.	221547.	147768.	147839.	158562.	157983.	187383.	202415.	243431.	292782.
INTEREST	66209.	69623.	68017.	68017.	90666.	86809.	80418.	122633.	133124.	204220.
TOTAL	555341.	584195.	526255.	557003.	632609.	688524.	723817.	760418.	934207.	1100857.
$/MG	376.	347.	315.	293.	276.	283.	290.	317.	325.	475.
$/MG 1975 DOLLARS	624.	559.	488.	431.	383.	377.	374.	384.	354.	475.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	50.42	50.16	59.00	61.25	60.60	64.45	63.00	57.25	59.69	54.95

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                                                                                                6-5-005
                                                                                                5/17/76
                                        CITY OF DENTUN
                                     COST SUMMARY FOR 1975
********************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
********************************************************************************************************

$/MG             35.          46.       138.        167.         88.       475.        0.       475.

% OF TUTAL       7.45         9.70      29.05       35.25        18.55     100.00

% OF TUTAL       7.45         9.70      29.05       35.25        18.55     100.00      0.00     100.00
   W/TAX




          IN SUMMARY:
               DURING THE PAST 10 YEARS, $   9264940. TOTAL COST IN 1975 DOLLARS PRODUCED
                  21542. MG WATER FOR AN AVERAGE COST OF $    430./ MG (1975 DOLLARS)
```

U. S. ENVIRONMENTAL PROTECTION AGENCY
WATER SUPPLY COST STUDY
EPA CONTRACT 68-03-2071
FOR
COLONY MUD NO. 1
6-5-007
5/19/76

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214-749-1962

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                                                                        6-5-007
                                                                        5/19/76
                               COLONY MUD NO. 1
                                 SYSTEM FACTS
                                     1975
POPULATION - SMSA                                        3400000
             COUNTY                                         9500
             CITY OR TOWN                                   N.A.
             RETAIL SERVICE AREA                           1552.
AREA OF RETAIL SERVICE AREA                                  0.44 SQ MI
NUMBER OF METERS                                            485.
NUMBER OF ACCOUNTS                                          485.
NUMBER OF FLAT RATE ACCOUNTS                                  0.
PURCHASED WATER - RAW                                         0 MG
                  TREATED                                     0 MG
SOURCE WATER - GROUND                                     100.0 %
               SURFACE                                      0.0 %
PIPE IN SYSTEM                                              N.A.
ELEVATIONS - INTAKES                                        570 FT
             TREATMENT PLANTS                               570 FT
             SERVICE AREA MIN.                              537 FT
             SERVICE AREA MAX.                              570 FT
REVENUE PRODUCING WATER                                  42.9100 MG
TREATED WATER                                            68.6200 MG
MAX. DAY                                                    .623 MG
MAX. HOUR                                                   1.30 MG
FISCAL YEAR                                                 3/31
IMPLEMENTATION DATE                                      5/19/76
PROCESSING DATE                                          6/ 2/76

                                                                        PAGE  2
```

6-5-007
5/19/76

COLONY MUD NO. 1

10-YEAR KEY O & M COST ANALYSIS

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
COST/YEAR										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	26004.
ACQUISITION	--	--	--	--	--	--	--	--	--	4500.
TREATMENT	--	--	--	--	--	--	--	--	--	2750.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	7500.
TOTAL	--	--	--	--	--	--	--	--	--	40754.
COST/MG										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	606.
ACQUISITION	--	--	--	--	--	--	--	--	--	105.
TREATMENT	--	--	--	--	--	--	--	--	--	64.
DISTRIBUTION	--	--	--	--	--	--	--	--	--	175.
TOTAL	--	--	--	--	--	--	--	--	--	950.
% OF TOTAL										
SUPPORT SERVICES	--	--	--	--	--	--	--	--	--	63.81
ACQUISITION	--	--	--	--	--	--	--	--	--	11.04
TREATMENT	--	--	--	--	--	--	--	--	--	6.75
DISTRIBUTION	--	--	--	--	--	--	--	--	--	18.40
TOTAL	--	--	--	--	--	--	--	--	--	100.00

COLONY MUD NO. 1

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED
CHLORINATION	100.%

TREATMENT CHEMICALS	LB/MG TREATED
CHLORINE	40.9

10-YEAR CHEMICAL COST ANALYSIS

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
TOTAL COST	--	--	--	--	--	--	--	--	--	642.
TREATED WATER	--	--	--	--	--	--	--	--	--	59.
BILLED MG	--	--	--	--	--	--	--	--	--	43.
$/MG TREATED	--	--	--	--	--	--	--	--	--	9.
$/MG BILLED	--	--	--	--	--	--	--	--	--	15.

```
                                                                                              6-5-007

                                                                                              5/19/76

                                      COLONY MUD NO. 1

                            RAW/TREATED WATER QUALITY INFORMATION

                          (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

*********************************************************************************************
*     CONSTITUENT      *           RAW               / /    *         TREATED       06/03/75 *
*                      *      MIN.        MAX.       TEST   *    MIN.       MAX.      TEST   *
*********************************************************************************************

  NITRATE (N)                                                                          <.4

  FLUORIDE                                                                             0.9

  CHLORIDE                                                                             270

  SULPHATE                                                                              88
```

6-5-007

5/19/76

COLONY MUD NO. 1

10-YEAR LABOR COST ANALYSIS

	1967	1966	1969	1970	1971	1972	1973	1974	1975	1976
PAYROLL $	--	--	--	--	--	--	--	--	--	13865.
MAN HOURS	--	--	--	--	--	--	--	--	--	3120.
MG BILLED CONSUMPTION	--	--	--	--	--	--	--	--	--	43.
$/MG	--	--	--	--	--	--	--	--	--	323.
MH/MG	--	--	--	--	--	--	--	--	--	73.
$/MH	--	--	--	--	--	--	--	--	--	4.44

6-5-007

5/19/76

COLONY MUD NO. 1

10-YEAR POWER COST ANALYSIS

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
POWER $	--	--	--	--	--	--	--	--	--	6003.
K W H	--	--	--	--	--	--	--	--	--	302836.
$/MG	--	--	--	--	--	--	--	--	--	143.
K W H/MG	--	--	--	--	--	--	--	--	--	7057.

```
                                    COLONY MUD NO. 1

                              10-YEAR DEPRECIATION ALLOCATION
* * **************************************************************************************************
*                        1967      1968      1969      1970      1971      1972      1973      1974      1975      1976   *
**************************************************************************************************
                                    DEPRECIATION COST $
                                    -------------------

SUPPORT SERVICES          --        --        --        --        --        --        --        --        --     7531.
ACQUISITION               --        --        --        --        --        --        --        --        --    12050.
TREATMENT                 --        --        --        --        --        --        --        --        --        0.
DISTRIBUTION              --        --        --        --        --        --        --        --        --   129537.
  TOTAL                   --        --        --        --        --        --        --        --        --   150625.
                                   DEPRECIATION COST $/MG
                                   ----------------------

SUPPORT SERVICES          --        --        --        --        --        --        --        --        --      176.
ACQUISITION               --        --        --        --        --        --        --        --        --      281.
TREATMENT                 --        --        --        --        --        --        --        --        --        0.
DISTRIBUTION              --        --        --        --        --        --        --        --        --     3019.
  TOTAL                   --        --        --        --        --        --        --        --        --     3510.
                                DEPRECIATION COST % OF TOTAL
                                ----------------------------

SUPPORT SERVICES          --        --        --        --        --        --        --        --        --      5.00
ACQUISITION               --        --        --        --        --        --        --        --        --      8.00
TREATMENT                 --        --        --        --        --        --        --        --        --      0.00
DISTRIBUTION              --        --        --        --        --        --        --        --        --     86.00
  TOTAL                   --        --        --        --        --        --        --        --        --     99.00
                                      INTEREST COST $
                                      ---------------

INTEREST $                --        --        --        --        --        --        --        --        --    17000.
INTEREST $/MG             --        --        --        --        --        --        --        --        --      395.
```

COLONY MUD NO. 1

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
O & M	--	--	--	--	--	--	--	--	--	40754.
DEPRECIATION	--	--	--	--	--	--	--	--	--	150625.
INTEREST	--	--	--	--	--	--	--	--	--	17000.
TOTAL	--	--	--	--	--	--	--	--	--	208379.
$/MG	--	--	--	--	--	--	--	--	--	4856.
$/MG 1975 DOLLARS	--	--	--	--	--	--	--	--	--	4419.
SPECIAL TAXES	--	--	--	--	--	--	--	--	--	0.
O & M % OF TOTAL	--	--	--	--	--	--	--	--	--	19.56

```
                                                                                                   6-5-007
                                                                                                   5/19/76
                                          COLONY MUD NO. 1

                                        COST SUMMARY FOR 1976

*****************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*****************************************************************************************************


$/MG             782.          386.        64.          3194.         396.       4821.        0.        4821.

% OF TOTAL       16.21         8.00        1.33         66.24         8.22       100.00

% OF TOTAL       16.21         8.00        1.33         66.24         8.22       100.00       0.00      100.00
    W/TAX




IN SUMMARY:

      DURING THE PAST  1 YEARS, $    189625. TOTAL COST IN 1975 DOLLARS PRODUCED

            43. MG WATER FOR AN AVERAGE COST OF $   4419./ MG (1975 DOLLARS)




                                                                                                   PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-C3-2071

FOR

DALLAS COUNTY WCID NO 6

6-5-008

5/20/76

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US EPA
SUITE 1100
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214-749-1962

DALLAS COUNTY WCID NO 6

SYSTEM FACTS

1975

POPULATION - SMSA	--
COUNTY	--
CITY OR TOWN	16000
RETAIL SERVICE AREA	13800.
AREA OF RETAIL SERVICE AREA	7.00 SQ MI
NUMBER OF METERS	3750.
NUMBER OF ACCOUNTS	3750.
NUMBER OF FLAT RATE ACCOUNTS	0.
PURCHASED WATER - RAW	0 MG
TREATED	341.42 MG
SOURCE WATER - GROUND	0.0 %
SURFACE	100.0 %
PIPE IN SYSTEM	65 MI
ELEVATIONS - INTAKES	NONE
TREATMENT PLANTS	NONE
SERVICE AREA MIN.	507 FT
SERVICE AREA MAX.	530 FT
REVENUE PRODUCING WATER	336.5380 MG
TREATED WATER	341.4210 MG
MAX. DAY	2.393 MG
MAX. HOUR	N.A.
FISCAL YEAR	6/30
IMPLEMENTATION DATE	5/20/76
PROCESSING DATE	6/ 2/76

6-5-008
5/20/76

DALLAS COUNTY WCID NO 6
10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
COST/YEAR										
SUPPORT SERVICES	27732.	29610.	28498.	35701.	35505.	42731.	54999.	68648.	76806.	61372.
ACQUISITION	8979.	9099.	25176.	32665.	47806.	47557.	68491.	79200.	84301.	89970.
TREATMENT	393.	252.	157.	146.	150.	220.	39.	39.	0.	0.
DISTRIBUTION	16220.	22322.	15810.	19126.	18983.	23808.	33207.	34158.	38424.	55681.
TOTAL	53325.	61282.	69641.	87640.	102444.	114324.	156736.	182044.	199532.	208024.
COST/MG										
SUPPORT SERVICES	175.	174.	149.	148.	141.	151.	167.	192.	225.	182.
ACQUISITION	57.	53.	132.	135.	190.	169.	209.	221.	247.	267.
TREATMENT	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.
DISTRIBUTION	102.	131.	83.	79.	75.	94.	101.	95.	113.	168.
TOTAL	336.	360.	365.	363.	407.	405.	477.	509.	586.	618.
% OF TOTAL										
SUPPORT SERVICES	52.01	48.32	40.92	40.74	34.66	37.38	35.09	37.71	36.49	29.50
ACQUISITION	16.84	14.85	36.15	37.27	46.67	41.60	43.70	43.51	42.25	43.25
TREATMENT	0.74	0.41	0.23	0.17	0.15	0.20	0.02	0.02	0.00	0.00
DISTRIBUTION	30.42	36.42	22.70	21.83	18.53	20.82	21.19	18.76	19.26	27.25
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

6-5-008

5/20/75

DALLAS COUNTY WCID NO 6

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED

TREATMENT CHEMICALS	LB/MG TREATED

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	393.	252.	157.	146.	150.	228.	39.	39.	0.	0.
TREATED WATER	--	--	--	--	--	--	--	--	--	341.
BILLED MG	159.	170.	191.	241.	252.	262.	328.	358.	341.	337.
$/MG TREATED	--	--	--	--	--	--	--	--	--	0.
$/MG BILLED	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.

```
                                                                                  6-5-008
                                                                                  5/20/75
                              DALLAS COUNTY WCID NO 6
                        RAW/TREATED WATER QUALITY INFORMATION
                    (UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)
**************************************************************************************
*      CONSTITUENT      *          RAW           / /   *          TREATED         / /   *
*                       *    MIN.       MAX.     TEST  *    MIN.       MAX.      TEST   *
**************************************************************************************
```

6-5-008

5/20/76

DALLAS COUNTY WCID NO 6

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	27982.	31161.	27992.	32019.	34667.	41032.	53205.	56531.	68316.	72181.
MAN HOURS	12118.	13151.	11221.	11679.	11721.	13164.	15349.	16866.	18269.	18562.
MG BILLED CONSUMPTION	159.	170.	191.	241.	252.	282.	328.	358.	341.	337.
$/MG	176.	183.	147.	133.	138.	145.	162.	158.	201.	214.
MH/MG	76.	77.	59.	48.	47.	47.	47.	47.	54.	55.
$/MH	2.31	2.37	2.49	2.74	2.96	3.12	3.47	3.35	3.74	3.89

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                                        DALLAS COUNTY WCID NO 6

                                      10-YEAR POWER COST ANALYSIS

**********************************************************************************************************
*                         1966      1967      1968      1969      1970      1971      1972      1973      1974      1975   *
**********************************************************************************************************

POWER $                  7579.     7779.     6823.     5728.     7400.     7407.     5115.     6381.     5370.     5225.

K W H                  711867.   729145.   562640.   531542.   680159.   670930.   415456.   495678.   371341.   291961.

$/MG                       48.       46.       36.       24.       29.       26.       16.       13.       16.       16.

K W H/MG                 4481.     4282.     2949.     2203.     2701.     2378.     1265.     1385.     1090.      858.
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DALLAS COUNTY WCID NO 6

10-YEAR DEPRECIATION ALLOCATION

*	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975 *
DEPRECIATION COST $										
SUPPORT SERVICES	2145.	2275.	2437.	2567.	2600.	2981.	3647.	543.	5586.	5531.
ACQUISITION	825.	875.	937.	987.	1000.	1147.	1403.	209.	2149.	2127.
TREATMENT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	13530.	14350.	15375.	16195.	16400.	18805.	23005.	3426.	35236.	34885.
TOTAL	16500.	17500.	18750.	19750.	20000.	22934.	28055.	4178.	42970.	42542.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	14.	13.	13.	11.	10.	11.	11.	2.	16.	15.
ACQUISITION	5.	5.	5.	4.	4.	4.	4.	1.	6.	5.
TREATMENT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	85.	84.	81.	67.	65.	67.	70.	10.	103.	104.
TOTAL	104.	103.	98.	82.	79.	81.	85.	12.	126.	126.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
ACQUISITION	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
TREATMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISTRIBUTION	82.00	82.00	82.00	82.00	82.00	82.00	82.00	82.00	82.00	82.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	24115.	23740.	23320.	22900.	22400.	61326.	72444.	71094.	69744.	68394.
INTEREST $/MG	152.	139.	122.	95.	89.	217.	221.	199.	205.	233.

DALLAS COUNTY WCID NO 6

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	53325.	61282.	69641.	87640.	102444.	114324.	156736.	182044.	199532.	208024.
DEPRECIATION	16500.	17500.	18750.	19750.	20000.	22934.	28055.	4178.	42970.	42542.
INTEREST	24115.	23740.	23320.	22900.	22400.	61326.	72444.	71094.	69744.	68394.
TOTAL	93940.	102522.	111711.	130290.	144843.	198583.	257235.	257316.	312245.	318963.
$/MG	591.	602.	586.	540.	575.	704.	783.	719.	917.	948.
$/MG 1975 DOLLARS	982.	969.	938.	794.	800.	936.	1010.	870.	999.	948.
SPECIAL TAXES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	56.77	59.77	62.34	67.27	70.73	57.57	60.93	70.75	63.90	65.22

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                                                                                          6-5-008
                                                                                          5/20/76
                                         DALLAS COUNTY WCID NO 6
                                         COST SUMMARY FOR 1975
*************************************************************************************************
*        *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*************************************************************************************************

$/MG            199.        274.        0.         272.        203.       948.       0.        948.

% OF TOTAL      20.98       28.87       0.00       28.71       21.44      100.00

% OF TOTAL      20.98       28.87       0.00       28.71       21.44      100.00     0.00      100.00
    W/TAX




        IN SUMMARY:
             DURING THE PAST 10 YEARS, $   2453620. TOTAL COST IN 1975 DOLLARS PRODUCED
                  2659. MG WATER FOR AN AVERAGE COST OF $    923./ MG (1975 DOLLARS)




                                                                                          PAGE 18
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U. S. ENVIRONMENTAL PROTECTION AGENCY

WATER SUPPLY COST STUDY

EPA CONTRACT 68-03-2071

FOR

CITY OF COCKRELL HILL

6-5-009

5/20/76

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                                                                              6-5-009
                                                                              5/20/76
                               CITY OF COCKRELL HILL
                                   SYSTEM FACTS
                                       1975
POPULATION - SMSA                                            --
             COUNTY                                          --
             CITY OR TOWN                                  3500
             RETAIL SERVICE AREA                           3500.
AREA OF RETAIL SERVICE AREA                                  1.00 SQ MI
NUMBER OF METERS                                           1040.
NUMBER OF ACCOUNTS                                         1040.
NUMBER OF FLAT RATE ACCOUNTS                                 0.
PURCHASED WATER - RAW                                        0 MG
                  TREATED                                116.118 MG
SOURCE WATER - GROUND                                        0.0 %
               SURFACE                                     100.0 %
PIPE IN SYSTEM                                              27 MI
ELEVATIONS - INTAKES                                       NONE
             TREATMENT PLANTS                              NONE
             SERVICE AREA MIN.                               --
             SERVICE AREA MAX.                               --
REVENUE PRODUCING WATER                                    101.7500 MG
TREATED WATER                                              107.1080 MG
MAX. DAY                                                   N.A.
MAX. HOUR                                                  N.A.
FISCAL YEAR                                                9/30
IMPLEMENTATION DATE                                       5/20/76
PROCESSING DATE                                           6/ 2/76

                                                                              PAGE  2
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CITY OF COCKRELL HILL

10-YEAR KEY O & M COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
				COST/YEAR						
SUPPORT SERVICES	--	--	--	9143.	12377.	13520.	16013.	6934.	8589.	16609.
ACQUISITION	--	--	--	43566.	42715.	42556.	44926.	41918.	44603.	40111.
TREATMENT	--	--	--	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	--	--	9735.	12054.	12170.	13714.	13676.	13745.	15302.
TOTAL	--	--	--	62444.	67146.	68256.	74653.	62529.	66937.	72022.
				COST/MG						
SUPPORT SERVICES	--	--	--	74.	85.	118.	139.	65.	76.	163.
ACQUISITION	--	--	--	354.	292.	372.	389.	393.	393.	394.
TREATMENT	--	--	--	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	--	--	79.	82.	105.	119.	129.	121.	150.
TOTAL	--	--	--	508.	459.	596.	647.	587.	589.	703.
				% OF TOTAL						
SUPPORT SERVICES	--	--	--	14.64	18.43	19.81	21.45	11.09	12.83	23.10
ACQUISITION	--	--	--	69.77	63.61	62.36	60.18	67.04	66.63	55.69
TREATMENT	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISTRIBUTION	--	--	--	15.59	17.95	17.83	18.37	21.87	20.53	21.25
TOTAL	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00

6-5-009

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CITY OF COCKRELL HILL

TREATMENT INFORMATION

TREATMENT PROCESSES	% WATER TREATED

TREATMENT CHEMICALS	LB/MG TREATED

10-YEAR CHEMICAL COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL COST	--	--	--	0.	0.	0.	0.	0.	0.	0.
TREATED WATER	--	--	--	129.	154.	121.	122.	112.	120.	137.
BILLED MG	--	--	--	123.	146.	115.	115.	107.	114.	132.
$/MG TREATED	--	--	--	0.	0.	0.	0.	0.	0.	0.
$/MG BILLED	--	--	--	0.	0.	0.	0.	0.	0.	0.

CITY OF COCKRELL HILL

RAW/TREATED WATER QUALITY INFORMATION

(UNITS ARE THE SAME AS SHOWN ON PAGE ABOVE)

CONSTITUENT	RAW MIN.	 MAX.	/ / TEST	TREATED MIN.	 MAX.	12/15/75 TEST
NITRATE (N)						0.9
FLUORIDE						0.8
CHLORIDE						33
IRON						0.16
SULPHATE						50

CITY OF COCKRELL HILL

10-YEAR LABOR COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
PAYROLL $	--	--	--	10359.	12935.	14322.	15362.	13278.	13496.	18445.
MAN HOURS	--	--	--	2080.	2080.	2080.	2080.	2080.	2080.	2080.
MG BILLED CONSUMPTION	--	--	--	123.	146.	115.	115.	107.	114.	102.
$/MG	--	--	--	84.	89.	125.	133.	125.	119.	181.
MH/MG	--	--	--	17.	14.	18.	18.	20.	18.	20.
$/MH	--	--	--	4.98	6.22	6.89	7.39	6.38	6.49	8.87

CITY OF COCKRELL HILL

10-YEAR POWER COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
POWER $	--	--	--	--	--	--	--	--	--	--
K W H	--	--	--	0.	0.	0.	0.	0.	0.	0.
$/MG	--	--	--	--	--	--	--	--	--	--
K W H/MG	--	--	--	0.	0.	0.	0.	0.	0.	0.

CITY OF COCKRELL HILL

10-YEAR DEPRECIATION ALLOCATION

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
DEPRECIATION COST $										
SUPPORT SERVICES	--	--	--	226.	226.	255.	255.	258.	278.	287.
ACQUISITION	--	--	--	0.	0.	0.	0.	0.	0.	0.
TREATMENT	--	--	--	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	--	--	4296.	4296.	4851.	4851.	4894.	5288.	5443.
TOTAL	--	--	--	4522.	4522.	5106.	5106.	5152.	5566.	5735.
DEPRECIATION COST $/MG										
SUPPORT SERVICES	--	--	--	2.	2.	2.	2.	2.	2.	3.
ACQUISITION	--	--	--	0.	0.	0.	0.	0.	0.	0.
TREATMENT	--	--	--	0.	0.	0.	0.	0.	0.	0.
DISTRIBUTION	--	--	--	35.	29.	42.	42.	46.	47.	54.
TOTAL	--	--	--	37.	31.	45.	44.	48.	49.	55.
DEPRECIATION COST % OF TOTAL										
SUPPORT SERVICES	--	--	--	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ACQUISITION	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TREATMENT	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISTRIBUTION	--	--	--	95.00	95.00	95.00	95.00	95.00	95.00	95.00
TOTAL	--	--	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00
INTEREST COST $										
INTEREST $	--	--	--	3424.	3341.	3231.	3094.	2956.	2819.	2681.
INTEREST $/MG	--	--	--	28.	23.	28.	27.	28.	25.	26.

CITY OF COCKRELL HILL

10-YEAR CAPITAL AND OPERATING COST ANALYSIS

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
O & M	--	--	--	62444.	67146.	68256.	74653.	62529.	66937.	72022.
DEPRECIATION	--	--	--	4522.	4522.	5106.	5106.	5152.	5566.	5735.
INTEREST	--	--	--	3424.	3341.	3231.	3094.	2956.	2819.	2681.
TOTAL	--	--	--	70389.	75009.	76593.	82853.	70637.	75322.	80438.
$/MG	--	--	--	573.	513.	669.	718.	663.	663.	791.
$/MG 1975 DOLLARS	--	--	--	842.	713.	893.	926.	802.	723.	791.
SPECIAL TAXES	--	--	--	0.	0.	0.	0.	0.	0.	0.
O & M % OF TOTAL	--	--	--	88.71	89.52	89.12	90.10	88.52	88.87	89.54

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                                                                                    6-5-009

                                                                                    5/20/75

                                           CITY OF COCKRELL HILL

                                           COST SUMMARY FOR 1975

*******************************************************************************************************
*          *SUPPORT SERVICES* ACQUISITION * TREATMENT * DISTRIBUTION * INTEREST *   TOTAL   *  TAXES   * TOTAL W/TAX *
*******************************************************************************************************


$/MG              166.          394.         0.          204.          26.       791.         0.         791.

% OF TOTAL        21.00         49.87        0.00        25.80         3.33      100.00

% OF TOTAL        21.00         49.87        0.00        25.80         3.33      100.00       0.00       100.00
   W/TAX




          IN SUMMARY:

               DURING THE PAST  7 YEARS, $    664494. TOTAL COST IN 1975 DOLLARS PRODUCED

                    821. MG WATER FOR AN AVERAGE COST OF $    809./ MG (1975 DOLLARS)





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